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A Site Investigation (SI) was conducted at four separate former underground storage tank (UST) locations. A total of nine USTs, at seven different locations, were removed as part of an on-going ANG tank removal program. Confirmation sampling performed at the time the tanks removed exhibited levels of contamination requiring further investigation at four of the locations, with two USTs at one of the locations. The former USTs were identified as; No. 591 adjacent to Building 659, No. 873 adjacent to Building 687, No. 801 adjacent to Building 680, and Nos. 651/652 adjacent to Building 665.

Volume II of this SI includes the following Appendices: A - Soil Boring and Monitoring Well Logs, B - Monitoring Well Construction Diagrams, C - Field GC Screening Results, D - Aquifer Slug Test Data Analysis, E - Field Notebooks, F - Monitoring Well Development, Purging, and Sampling Logs, G - Chain of Custody, and H - HRS Data Package.

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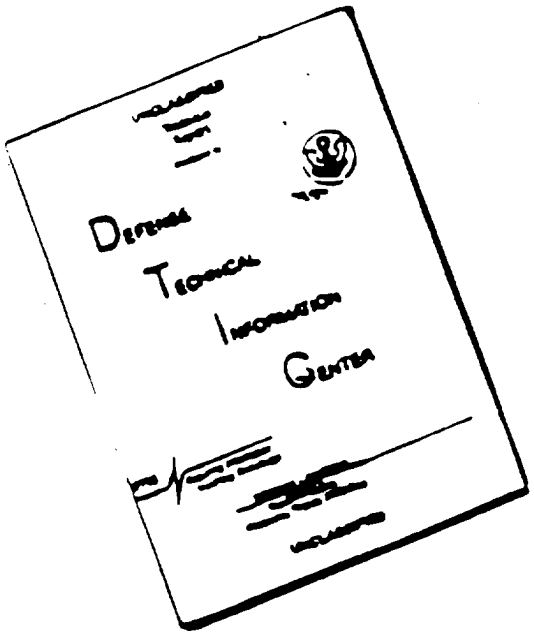
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SITE INVESTIGATION REPORT FOR FORMER UST SITE NOS. 1, 2, 3, AND 4

VOLUME II
APPENDICES A-H

133rd AIRLIFT WING
MINNESOTA AIR NATIONAL GUARD
MINNESOTA AIR NATIONAL GUARD BASE
MINNEAPOLIS, MINNESOTA

NOVEMBER 1996



Prepared For

ANGRC/CEVR
ANDREWS AFB, MARYLAND

SITE INVESTIGATION REPORT FOR FORMER UST SITE NOS. 1, 2, 3, AND 4

VOLUME II

APPENDICES A-H

133rd AIRLIFT WING
MINNESOTA AIR NATIONAL GUARD
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Prepared For

ANGRC/CEVR
ANDREWS AFB, MARYLAND

Prepared By

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1315-193

APPENDIX A

SOIL BORING AND MONITORING WELL LOGS

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LOG OF BORING 591-01BH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	17.5 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	12.9 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/07/95
Date Drilled:	08/07/95	**Surface Elevation:**	824.53 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	- - -				Asphalt, subgrade, rock and brick rubble.	-	-	-	-
	4 7 10	100			Sand, brown, fine to medium grained, poorly sorted, subrounded, with gravel and silt, slightly moist.	14.6	1.1	<5	<100
	4 6 7	100			As above with occasional wood fragments.	1.1	0.3	<5	<100
5									
	3 5 6	100			Sand, light brown, medium grained, well sorted, subrounded.	0	0	<5	<100
10									
	10 18 20	66			Sand and gravel, light brown, coarse to medium grained, poorly sorted, subangular, with rock and shale fragments, wet at 14.5 ft. BLS.	0	0	<5	<100
15									
	12 21 23	100			Clay, green, damp.	0	0	<5	<100
					Boring Terminated at 17.5 ft. BLS. Water level in boring after 4 hours = 12.4 ft. BLS. Water level in boring after 10 minutes = 13.2 ft. BLS.				

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LOG OF BORING 591-02BH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	14.0 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	13.5 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/07/95
Date Drilled:	08/07/95	**Surface Elevation:**	823.90 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	2 3 10	100			Topsoil, sandy loam, black.	0.8	0	<5	<100
	6 10 11	100			Sand, brown, medium to fine grained, poorly sorted, subrounded, with gravel and silt, slightly moist.	0	0	<5	<100
5									
	2 4 5	100			Sand, as above.	0	0	<5	<100
10									
	100 - -	33			Sand, as above with hard ironstone layer, wet. Boring Terminated at 14.0 ft. BLS. Water level in boring after 30 minutes = 13.2 ft. BLS.	0	0	<5	<100
15									

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LOG OF BORING 591-03BH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	15.0 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	13.5 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/07/95
Date Drilled:	08/07/95	**Surface Elevation:**	823.12 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	4 6 7	100			Topsoil, sandy loam, black, occasional limestone gravel.	0	0	<5	<100
	13 14 11	100			Sand, dark brown, medium to fine grained, poorly sorted, subrounded, occasional gravel, moist.	0	0	<5	<100
5									
	1 1 3	100			Sand, as above.	0	0	<5	<100
10									
	23 11 12	100			Limestone, grayish green with reddish-brown sandy clay, fossilferous, weathered, wet.	0	0	<5	<100
15					Clay, green, damp.				
					Boring Terminated at 15.0 ft. BLS. MS/MSD soil sample collected from 9-10 ft. interval.				

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LOG OF BORING 591-04BH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	19 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	18.5 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/07/95
Date Drilled:	08/07/95	**Surface Elevation:**	823.42 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	3 6 7	75			Topsoil, sandy loam, black, with some cobbles.	0	0	<5	<100
	4 4 4	100			Sand, dark brown, medium to fine grained, poorly sorted, subrounded, occasional gravel, slightly moist.	0	0	<5	<100
5									
	1 3 7	100			Sand, as above with black staining.	0	0	<5	<100
10									
	100 - -	100			Limestone, grayish green, with reddish-brown clay, fossilferous, highly weathered.	0	0	<5	<100
15									
	7 13 21	100			Clay, green, occasional pyrite.	0	0	8	<100
	100 - -	100			Limestone, gray to brown, slightly fossilferous, with silty sand, wet at 18.5 ft. BLS.	0	NA	16	<100
20					Boring Terminated at 19.0 ft. BLS Insufficient sample volume from 18.5-19.0 ft. BLS interval to run ATHA. Duplicate soil sample selected from 9-10 ft. BLS (591-001DUP).				
25									

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LOG OF BORING 591-01MW

Project No.:	1315-193	**Sampling Method:**	Split-Spoon, Drill Cutting
Logged By:	Russ Cason	**Depth Drilled:**	30.0 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	14.0 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/08/95
Date Drilled:	08/08/95	**Surface Elevation:**	823.80 ft (MSL)
Drilling Method:	Hollow-Stem Auger/Air Rotary		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	- - -	100			Asphalt, subgrade, and rubble.	-	-	-	-
	3 5 6	100			Sand, dark brown, coarse to fine grained, poorly sorted, with some clay and gravel, some asphalt fragments.	0	0	<5	<100
	12 11 20	100			Sand as above with thin clay layer, black staining, slightly moist.	0	0	<5	<100
5									
	2 6 11	100			Sand as above, medium to fine grained.	0	0	<5	<100
10									
	25 16 12	100			Sandy clay, reddish brown, with gravel and limestone fragments, wet at 14 ft. BLS.	0	0	<5	<100
15					Clay, green, with occasional gravel, slightly moist.				
	- - -	0			Bedrock - HSA refusal. Limestone, gray, slightly fossilferous, dry.	- -	- 0.5	- 5	- <100

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LOG OF BORING 591-01MW

Project No.:	1315-193	**Sampling Method:**	Split-Spoon, Drill Cutting
Logged By:	Russ Cason	**Depth Drilled:**	30.0 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	14.0 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/08/95
Date Drilled:	08/08/95	**Surface Elevation:**	823.80 ft (MSL)
Drilling Method:	Hollow-Stem Auger/Air Rotary		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	- - -				Limestone, as above	-	0	<5	<100
					Limestone, as above.	-	0	<5	<100
					Limestone, as above.	-	0	-	-
25									
					Limestone, as above.	-	0	<5	<100
					Limestone, dark gray,wet.	-	0	<5	<100
30					Boring Terminated at 30 ft. BLS. HSA Refusal at 17.9 ft. BLS. Air rotary drilling used from 17.9 ft. BLS to 30 ft. BLS. Surface casing set 8 August, 1995 with HSA. Well drilled out to 30.0 ft. BLS on 14 August, 1995.				
35									

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LOG OF BORING 873-01BH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	10.7 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	Not Encountered
Driller:	Tommy White	**Date Measured:**	08/08/95
Date Drilled:	08/08/95	**Surface Elevation:**	819.27 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	- - -				Asphalt and subgrade.	-	-	-	-
	8 5 7	100			Clayey sand, brown, rock fragments, occasional black staining.	0	0	<5	<100
	6 10 17	100			Sand, brown, medium to fine-grained, poorly sorted, subround, with gravel.	0	0	5	<100
5									
	9 15 22	100			Clay, green, occasional pyrite.	10.6	0	<5	<100
10	- - -				Limestone.	-	-	-	-
					Boring Terminated at 10.7 ft. HSA refusal at 10.7 ft. Water level in boring after 20 minutes = 8.2 ft. BLS Water level in boring after 40 minutes = 7.78 ft. BLS				
15									

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LOG OF BORING 873-02BH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	11.7 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	Not Encountered
Driller:	Tommy White	**Date Measured:**	08/08/95
Date Drilled:	08/08/95	**Surface Elevation:**	819.07 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	-				Asphalt and subgrade.	-	-	-	-
	-								
	-	100							
	7	100			Sand, brown, medium-grained, poorly sorted subrounded, with occasional gravel.	0	2.1	<5	<100
	9				Black clay layer at 2 ft. BLS.				
	8								
	4								
	4								
	5					0	0	<5	<100
					Sandy clay, gray, with occasional gravel and cobble, iron staining, bituminous matter.				
5									
	11	100							
	17				Limestone fragments, gray, slightly fossilferous, fine to rounded, weathered.	0	0.3	<5	<100
	25								
10					Clay, green, occasional pyrite.				
	-	0			Limestone.				
	-								
	-								
					Boring Terminated at 11.7 ft. BLS.	-	-	-	-
					HSA Refusal at 11.7 ft. BLS.				
					Water level in boring after 30 minutes = 8.2 ft. BLS.				
					Water level in boring after 60 minutes = 8.2 ft. BLS.				
					Duplicate sample collected at 9-10 ft. BLS (873-001DUP).				
15									

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LOG OF BORING 873-03BH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	11.3 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	Not Encountered
Driller:	Tommy White	**Date Measured:**	08/09/95
Date Drilled:	08/09/95	**Surface Elevation:**	819.05 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	- - -				Asphalt and subgrade.	-	-	-	-
	6 8 8	100			Sand, brown, medium to fine grained, poorly sorted, subrounded.	0	0	<5	<100
	6 6 11	75			Sandy clay and gravel, gray, iron staining, some cobbles.	0	0	13	<100
5									
	6 7 26	100			Clay, green, occasional gravel.	0.4	0	<5	<100
10	- - -	0			Limestone.	-	-	-	-
					Boring Terminated at 11.3 ft. BLS. HSA Refusal at 11.3 ft. BLS. Water level in boring after 10 minutes = 7.3 ft. BLS.				
15									

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LOG OF BORING 873-01MW

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	11.1 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	6.64 ft. BTOC
Driller:	Tommy White	**Date Measured:**	08/16/95
Date Drilled:	08/11/95	**Surface Elevation:**	NA
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	- - -		X		Asphalt and subgrade.	-	-	-	-
	2 3 6	100	X		Sandy clay, black, with gravel and rock fragments.	0	0	<5	<100
	2 2 4	100	X		Sandy clay and sand, gray green to brown, sand fraction medium-grained, poorly sorted, moist, occasional bituminous matter.	0	0	<5	<100
5									
	9 20 29	100	X		Clay, green, blocky.	0	0	<5	<100
10	- - -	0	X		Limestone.	-	-	-	-
					Boring Terminated at 11.1 ft. BLS. HSA Refusal at 11.1 ft. BLS.				
15									

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LOG OF BORING 801-01BH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	15.5 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	14 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/09/95
Date Drilled:	08/09/95	**Surface Elevation:**	819.88 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	- - -				Asphalt and subgrade.	-	-	-	-
	5 8 10	100			Sand, brown, medium grained, well sorted, subrounded.	0	0	<5	<100
	4 6 7	100			Clayey sand, reddish brown, medium grained, subrounded, with gravel.	0	0	<5	<100
5									
	5 7 8	100			Clay, gray-green, hydrocarbon odor.	292	587	<5	<100
10									
	100 - -	10			Sand, brown, medium to fine grained, poorly sorted, subrounded, wet with ironstone lenses.	0	NA	NA	NA
15	- -	0			Limestone.	-	-	-	-
					HSA Refusal at 15.5 ft. BLS. Insufficient volume for ATHA or Field GC screening on 13.5-13.8 ft. sample. Water level in boring after 100 minutes = 7.5 ft. BLS. Duplicate soil sample submitted for 9-10 ft. interval (801-001DUP). Top of bedrock at 15.5 ft. BLS.				

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LOG OF BORING 801-2ABH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	5 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	Not Encountered
Driller:	Tommy White	**Date Measured:**	08/09/95
Date Drilled:	08/09/95	**Surface Elevation:**	818.57 ft
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	- - -				Asphalt and subgrade.	-	-		
	5 6 7	100			Clayey sand, dark brown, medium grained, poorly sorted, subrounded, gravel, some bituminous matter.	0	0		
	2 1 1	100			Sand, brown, black plastic liner found in sampler.	0	0		
5					Boring Terminated at 5 ft. BLS. Boring abandoned and grouted immediately after encountering probable plastic liner of UST pit. No soil samples submitted for Field GC or laboratory analysis.				
10									
15									

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LOG OF BORING 801-02BH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	10.7 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	Not Encountered
Driller:	Tommy White	**Date Measured:**	08/09/95
Date Drilled:	08/09/95	**Surface Elevation:**	818.97 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	- - -				Asphalt and subgrade.	-	-	-	-
	5 10 12	100			Sand, brown, fine to medium grained, poorly sorted, subrounded.	0	0	<5	<100
	7 12 17	100			As above with occasional gravel.	0.8	0	<5	<100
5									
	3 7 14	100			Clay, green.	0	0	<5	<100
10	- - -	0			Limestone.	-	-	-	-
					Boring Terminated at 10.7 ft. BLS HSA Refusal at 10.7 ft. BLS. No water in boring after 20 minutes.				
15									

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O P T E C H

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING 801-03BH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon Sampler
Logged By:	Russ Cason	**Depth Drilled:**	11.3 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	10 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/10/95
Date Drilled:	08/10/95	**Surface Elevation:**	818.28 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	- - -				Asphalt and subgrade.	-	-	-	-
	5 10 8	100			Sand, brown, medium to fine grained, poorly sorted, subrounded, occasional gravel.	0	0	<5	<100
	3 6 10	100			Sandy clay, brown, occasional gravel.	0	0	<5	<100
5									
	5 9 16	100			Clay, brown, wet at 10 ft. BLS.	0	11.3	<5	<100
10	- - -	0			Limestone. Boring Terminated at 11.3 ft. BLS.	-	-	-	-
					HSA Refusal at 11.3 ft. BLS. Groundwater noted in sample at 10 ft. BLS. Water level in boring after 10 minutes = 6.6 ft. BLS. MS/MSD collected from 9-10 ft. interval.				
15									

Minnesota ANGB SI

Minneapolis, Minnesota

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LOG OF BORING 801-01MW

Project No.:	1315-193	**Sampling Method:**	Split-Spoon Sampler
Logged By:	Russ Cason	**Depth Drilled:**	11.5 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	9.5 ft.
Driller:	Tommy White	**Date Measured:**	08/10/95
Date Drilled:	08/10/95	**Surface Elevation:**	818.42 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	- - -				Asphalt and subgrade.	-	-	-	-
	5 10 10	100			Sand, brown, medium to fine grained, poorly sorted, subrounded, occasional gravel.	0	0	<5	<100
	6 18 35	100			Clayey sand, and gravel, green.	0	0	<5	<100
5					Sand, brown, medium to fine grained, poorly sorted, subrounded, occasional gravel.				
	5 11 18	100			Clay, green, occasional gravel, wet at 9.5 ft. BLS.	0	0	<5	<100
10	- - -	0			Limestone. Boring Terminated at 11.5 ft. BLS	-	-	-	-
					HSA Refusal at 11.5 ft. BLS. Soil sample intervals screened with PID and Field GC, no samples submitted to laboratory.				
15									

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LOG OF BORING 651-01BH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	11.6 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	Not Encountered
Driller:	Tommy White	**Date Measured:**	08/01/95
Date Drilled:	08/01/95	**Surface Elevation:**	820.15 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	10 12 14	100			Clayey sand, black, some iron staining.	0	20	<5	<100
	10 17 23	100			Sandy clay, brown.	0	0	<5	<100
5									
	12 15 20	100			Clayey sand, dark gray, fine grained, well sorted, subrounded, with fragments of dark gray shale and limestone.	0	0	<5	<100
10									
	- - -	0			Limestone. Boring Terminated at 11.6 ft. BLS. HSA refusal at 11.6 ft. BLS. No water encountered while drilling.	-	-	-	-
15									

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LOG OF BORING 651-02BH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	10.0 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	9.7 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/01/95
Date Drilled:	08/01/95	**Surface Elevation:**	821.42 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	9 9 7	50			Sand, brown, medium grained, well sorted, subrounded.	0	0	<5	<100
	2 2 6	100			Sand as above. Sandy clay, dark gray.	0	0	<5	<100
5									
	11 17 17	100			Sandy clay, dark gray with gravel, wet.	0	0	<5	<100
10					Boring Terminated at 10.0 ft. BLS. Water level in boring after 40 minutes = 7.2 ft. BLS.				
15									

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LOG OF BORING 651-03BH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	10.0 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	9.8 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/02/95
Date Drilled:	08/02/95	**Surface Elevation:**	820.35 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	10 8 10	100			Clayey sand, brown, medium grained, subrounded.	1.2	1.9		
	4 6 10				Silty sand, dark brown, medium grained, subrounded, hydrocarbon odor.	378	1.9		
5									
	4 11 32				Sandy clay, greenish-gray, with gravel, wet at 9.8 ft. BLS.	175	16.2		
10					Boring Terminated at 10.0 ft. BLS. Duplicate soil sample from 0-2 ft. interval submitted to laboratory.				
15									

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LOG OF BORING 652-04BH

Project No.:	1315-193	**Sampling Method:**	Split-spoon
Logged By:	Russ Cason	**Depth Drilled:**	10.0 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	9.5 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/02/95
Date Drilled:	08/02/95	**Surface Elevation:**	819.94 ft (MSL)
Drilling Method:	Hollow-stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	10 6 5	100			Sandy clay, brownish black with sand stringers and gravel.	1179	258	<5	<100
	2 4 5	100			Sand, brown, medium to fine grain, poorly sorted, subangular.	0	0	<5	<100
5					Clayey sand, medium grained, subangular.				
	1 1 2	100			Sand, brown, medium grained, well sorted, subangular, wet at 9.5 ft. BLS.	0	0	<5	<100
10					Boring Terminated at 10.0 ft. BLS.				
15									

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LOG OF BORING 652-05BH

Project No.:	1315-193	**Sampling Method:**	Split-spoon
Logged By:	Russ Cason	**Depth Drilled:**	15.0 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	13.6 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/02/95
Date Drilled:	08/02/95	**Surface Elevation:**	816.46 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	5 5 5	100			Sandy clay, brown, with gravel.	0	0	<5	<100
	7 14 16	100			Clayey sand, brown medium grained, subrounded.	144	1	<5	224
5									
	5 11 14	100			Clayey sand as above, with gravel.	3	7	<5	435
10									
	1 1 1	100			Clayey sand, medium grained, subrounded, piece of plastic liner noted in sample shoe. Wet at 13.6 ft. BLS.	0	0	<5	<100
15					Boring Terminated at 15.0 ft. BLS. Presence of plastic liner fragment in sample from interval 13.5 - 15.0 ft. indicates boring located in tank fill. Boring immediately grouted to surface. No samples submitted for laboratory analysis.				

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LOG OF BORING 652-06BH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	16.4 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	Not Encountered
Driller:	Tommy White	**Date Measured:**	08/02/95
Date Drilled:	08/02/95	**Surface Elevation:**	819.69 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	9 13 13	100			Sand, brown to black, medium to fine grained, poorly sorted, subangular.	0	0	< 5	< 100
	3 6 13	100			Sand, brown, medium to fine grained, poorly sorted, subangular.	0	0	< 5	< 100
5									
	11 20 32	100			Clayey sand, greenish-gray, medium to fine grained, poorly sorted, subrounded, with gravel.	0	0	< 5	< 100
10									
	17 37 34	100			Sandy clay, dark gray, with limestone fragments.	0	0	< 5	< 100
15									
	100/1 - -	0			Powdered limestone noted on split-spoon shoe. Boring Terminated at 16.4 ft. BLS. HSA refusal at 16.4 ft. BLS.	-	-	-	-

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LOG OF BORING 652-07BH

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	15.3 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	Not Encountered
Driller:	Tommy White	**Date Measured:**	08/03/95
Date Drilled:	08/03/95	**Surface Elevation:**	819.22 ft (MSL)
Drilling Method:	Hollow-stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	9 5	100			Top soil, sandy loam, black.	0	0	-	-
	10/10				Clayey sand, black coarse to fine grain, poorly sorted, subangular, hydrocarbon odor.	254	145	<5	2,258
	5	100				439	115	<5	9,190
	5 7				Clayey sand as above with cobbles, hydrocarbon odor.				
	3	100				327	419	<5	40,360
	3 7				Clayey sand as above, slightly moist.				
5									
	3 5	100				321	0	<5	1,020
	18				Sandy clay, gray, with dark green shale fragments.				
10									
	12	100				8	0	<5	132
	24 27				Clayey sand, greenish to gray, medium to fine grained, poorly sorted, subrounded.				
15					Limestone.				
	-	0			Boring Terminated at 15.3 ft. BLS.	-	-	-	-
	-				HSA refusal at 15.3 ft. BLS.				
	-				No water in boring after 30 minutes; water level after 4.5 hours = 14.9ft BLS.				
					Duplicate soil sample collected from 2.5 to 3.5 ft. interval.				
					Soil sample submitted for MS/MSD from 9-10 ft. interval.				

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LOG OF BORING 651-01MW

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	10 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	9.5 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/03/95
Date Drilled:	08/03/95	**Surface Elevation:**	NA
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	7 11 19	100			Topsoil, sandy loam, black. Clayey sand, brown medium to fine grained, poorly sorted, subrounded, with gravel.	0	0	<5	<100
	3 6 16	100			Sand, brown, medium grained, well sorted, subrounded.	0	0	<5	<100
5									
	4 30 39	60			As above with gravel, damp. Possible tank backfill.	0	0	<5	<100
10					Shale fragments, greenish-black, with fine grained sand, well sorted, subangular, damp at 9.5 ft. BLS. Boring Terminated at 10.0 ft. BLS. Water level in boring after 10 minutes = 7.8 ft. BLS; after 2 hours, 6.9 ft BLS. Borehole abandoned because of suspected location within backfilled UST pit. No samples submitted for laboratory analysis.				
15									

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LOG OF BORING 651-1MWA

Project No.:	1315-193	**Sampling Method:**	Split-Spoon
Logged By:	Russ Cason	**Depth Drilled:**	15.2 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	7.6 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/03/95
Date Drilled:	08/03/95	**Surface Elevation:**	821.11 ft (MSL)
Drilling Method:	Hollow-Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	11 10 12	100			Topsoil, sandy loam, black. Clayey sand, black medium to fine grained, poorly sorted, subrounded, with gravel.	0	0	<5	<100
	5 14 20	100			Sand, brown, medium grained, moderately sorted, subrounded, occasional cobbles.	0	0	<5	<100
5									
	12 21 25	100			Sand as above with red and green shale fragments, wet at 9.5 ft. BLS. Sand as above with fragments of green shale, pyrite.	0	0	<5	<100
10									
	4 15 19				Sandy clay, dark greenish-gray with shale fragments.	0	0	<5	142
15	-				Limestone.	-	-	-	-
	-				Boring Terminated at 15.2 ft. BLS.				
	-				Water level in boring after 1 hour = 7.6 ft. BLS.				
					Boring drilled out on 4 August 1995 to complete monitoring well.				
					No soil samples submitted to laboratory for analysis.				

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Minneapolis, Minnesota

OPTECH

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING 651-1MWB

Project No.:	1315-193	**Sampling Method:**	Air rotary cuttings
Logged By:	Robert Abernethy	**Depth Drilled:**	22.6 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	18.5 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/19/95
Date Drilled:	08/18/95	**Surface Elevation:**	821.20 ft (MSL)
Drilling Method:	Mud Rotary/Air Rotary		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
					Mud Rotary Drilling to 15 Ft. BLS. No Soil Samples Collected.				
5									
10									
					Begin Air Rotary at 15.0 Ft. BLS.				
15	- - -				Limestone, brown to gray.	0	0	NA	NA
						0	0	NA	NA

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O P T E C H

OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING 651-1MWB

Project No.:	1315-193	**Sampling Method:**	Air rotary cuttings
Logged By:	Robert Abernethy	**Depth Drilled:**	22.6 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	18.5 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/19/95
Date Drilled:	08/18/95	**Surface Elevation:**	821.20 ft (MSL)
Drilling Method:	Mud Rotary/Air Rotary		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
						0	0	NA	NA
					Boring Terminated at 22.6 ft. BLS. No soil samples submitted for laboratory analysis. Advanced augers into bedrock from 15.2 ft. BLS to 16.7 ft. BLS and 6 in. steel surface casing.				
25									
30									
35									

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OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING 651-02MW

Project No.:	1315-193	**Sampling Method:**	Split-Spoon/Drill Cutting
Logged By:	Russ Cason	**Depth Drilled:**	25 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	23.1 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/11/95
Date Drilled:	08/05/95 , 08/11/95	**Surface Elevation:**	818.95 ft (MSL)
Drilling Method:	Hollow-Stem Auger/Air Rotary		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	- - -	100			Asphalt and subbase.	-	-	-	-
	3 6 7	100			Sand, brown, medium grained, well sorted, sub rounded, some rock fragments and gravel, slightly moist.	0	1.9	<5	165
	2 5 8	100			Sand as above.	6.3	79	<5	183
5					Sandy clay, reddish-brown, with iron staining and rock fragments.				
	17 23 17	100			Sandy clay as above with sand stringers.	0	0	<5	<100
10									
	11 11 50/2	100			Clayey sand, gray, with silt, fine grained, subrounded.	0	0	6	<100
15	-	0			Clay, green, occasional gravel, bedrock indicated at 14.7 ft. BLS.	-	1.5	<5	<100
	-	100			Limestone, gray, fossiliferous. 8/11/95.	-	-	-	-
	- - -	100			Limestone, white, fossilerous.	-	0.5	<5	<100
	- - - - - - - - -	100			Limestone as above.	-	0	<5	<100

Minnesota ANGB SI

Minneapolis, Minnesota

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OPERATIONAL TECHNOLOGIES CORPORATION

LOG OF BORING 651-02MW

Project No.:	1315-193	**Sampling Method:**	Split-Spoon/Drill Cutting
Logged By:	Russ Cason	**Depth Drilled:**	25 ft. BLS
Drilling Co.:	Maxim Technologies, Inc.	**Depth To Water:**	23.1 ft. BLS
Driller:	Tommy White	**Date Measured:**	08/11/95
Date Drilled:	08/05/95 , 08/11/95	**Surface Elevation:**	818.95 ft (MSL)
Drilling Method:	Hollow-Stem Auger/Air Rotary		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING PID (ppm)	ATHA (ppm)	Benzene (ppb)	BTEX (ppb)
	- - - -	100			Limestone, brown, slightly fossiliferous.	-	5.5	29	418
	- - -	100			Limestone. Drill cuttings are water saturated powder; no PID readings possible.	-	-	-	-
25					Boring Terminated at 25 ft. BLS. Drilled out to 25 ft. on 11 August, 1995 with air rotary rig. Water level in boring after 10 minutes = 10.6 ft BLS. No soil samples submitted for laboratory analyses.				
30									
35									

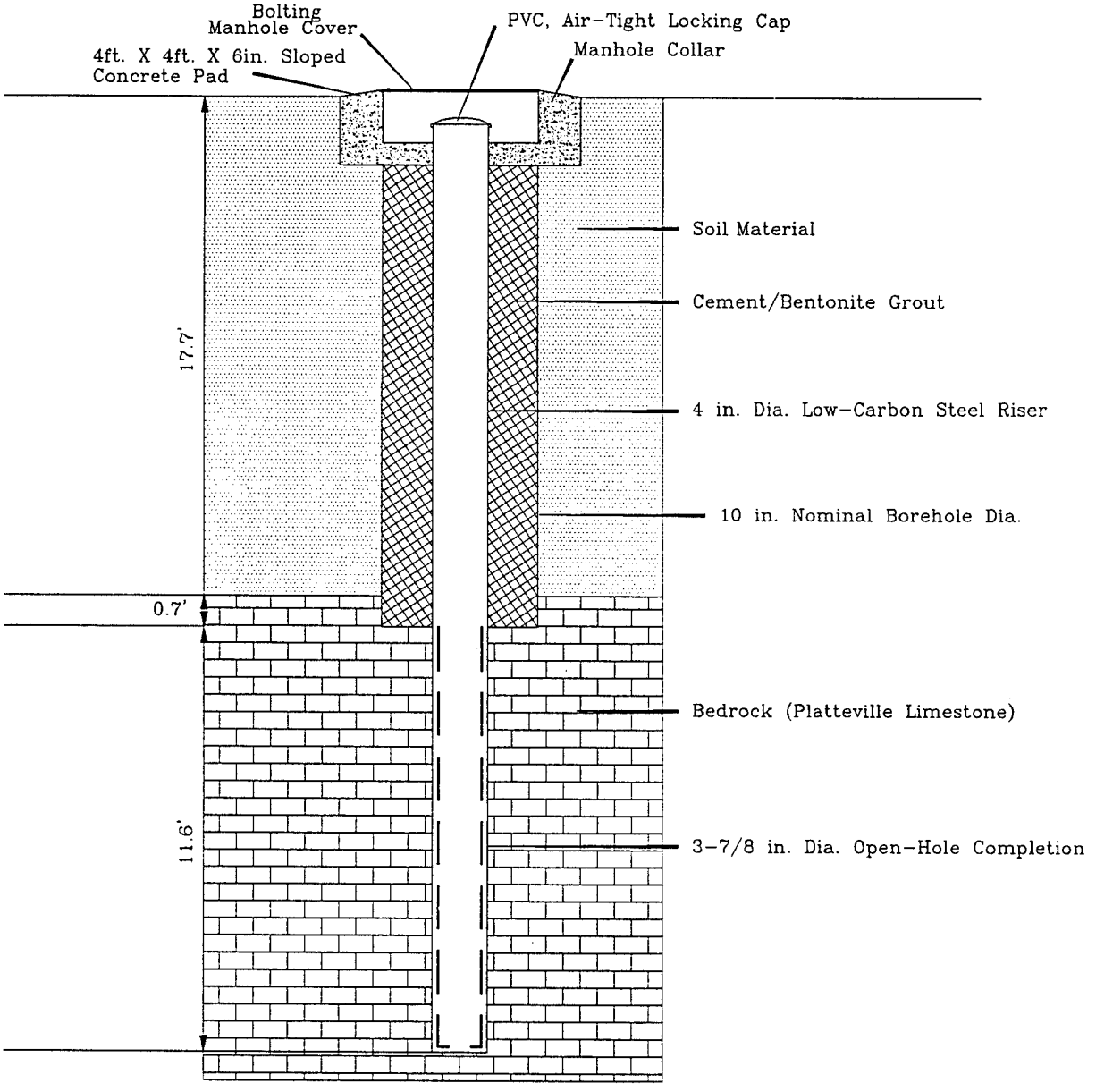
APPENDIX B

MONITORING WELL CONSTRUCTION DIAGRAMS

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Project:	Minnesota ANGB SI	Date Installed:	August 8, 1995
Town/City:	Minneapolis	Drilling Contractor:	Maxim Technologies Inc.
County:	Hennepin State: Minnesota	Drilling Method:	Hollow-Stem Auger/ Air Rotary
TOC Elev:	823.81' (MSL)	Borehole Diameter:	Variable
Ground Elev.:	823.80' (MSL)	Development Technique:	Submersible Pump
Water Level:	16.37' (8/16/95) TOC		
Total Well Depth:	30'		

Not To Scale



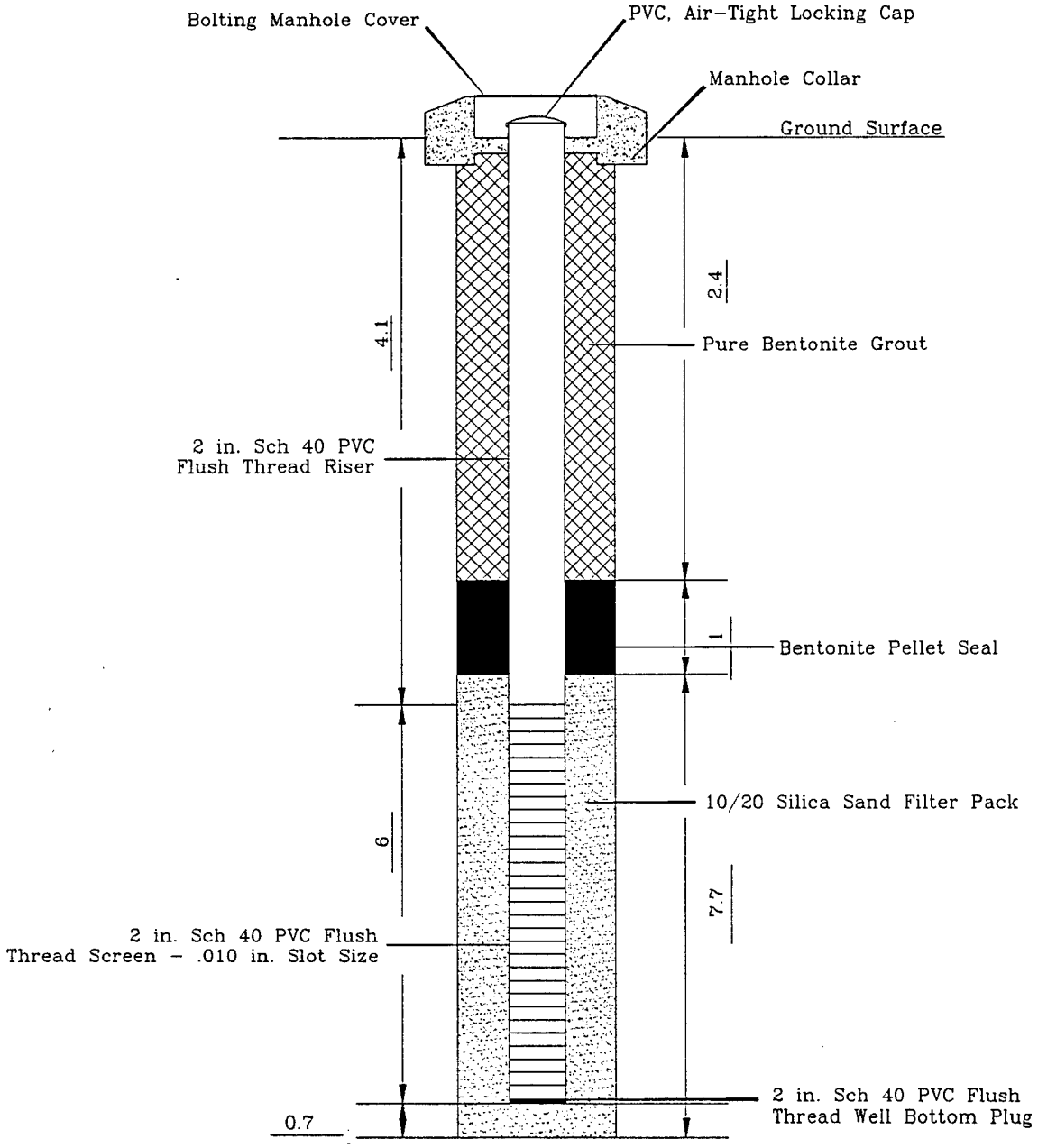
MONITORING WELL CONSTRUCTION LOG

Well No. 591-001MW

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

WELLS\OPENFLSH JANUARY 1996

Project:	Minnesota ANGB SI	Date Installed:	August 11, 1995
Town/City:	Minneapolis	Drilling Contractor:	Maxim Technologies, Inc.
County:	Hennepin State: Minnesota	Drilling Method:	Hollow-Stem Auger
TOC Elev:	818.79' (MSL)	Borehole Diameter:	10 1/4"
Ground Elev.:	NA	Development Technique:	Bail and Surge
Water Level:	6.64' (8/16/95) TOC		
Total Well Depth:	10.8		Not To Scale

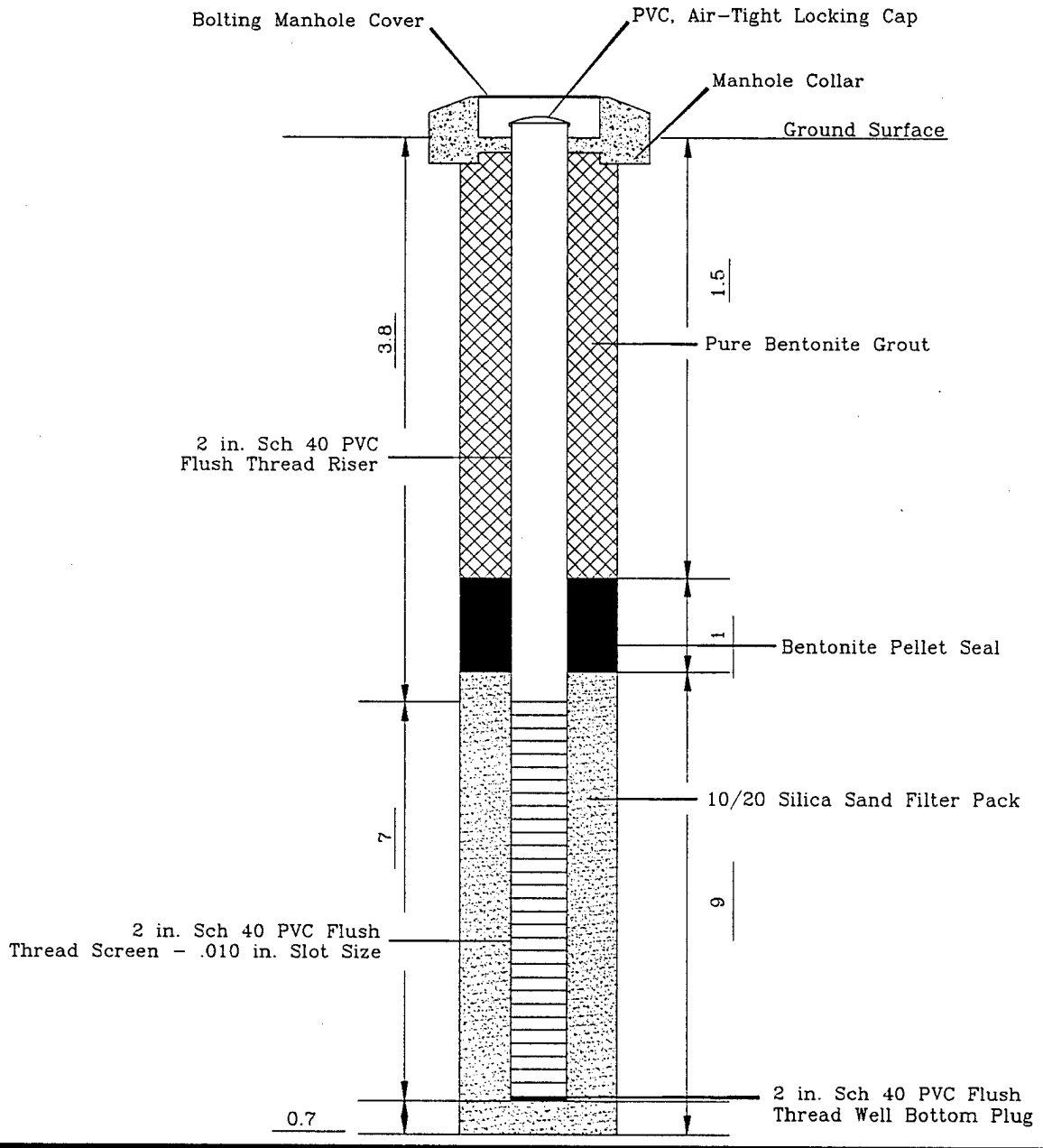


MONITORING WELL OR PIEZOMETER CONSTRUCTION LOG

Well No. 873-001MW

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

Project:	Minnesota ANGB SI	Date Installed:	August 10, 1995
Town/City:	Minneapolis	Drilling Contractor:	Maxim Technologies, Inc.
County:	Hennepin State: Minnesota	Drilling Method:	Hollow-Stem Auger
TOC Elev:	818.36' (MSL)	Borehole Diameter:	10 1/4"
Ground Elev.:	818.42' (MSL)	Development Technique:	Bail and Surge
Water Level:	5.57' (8/16/95) TOC		
Total Well Depth:	10.8'		Not To Scale

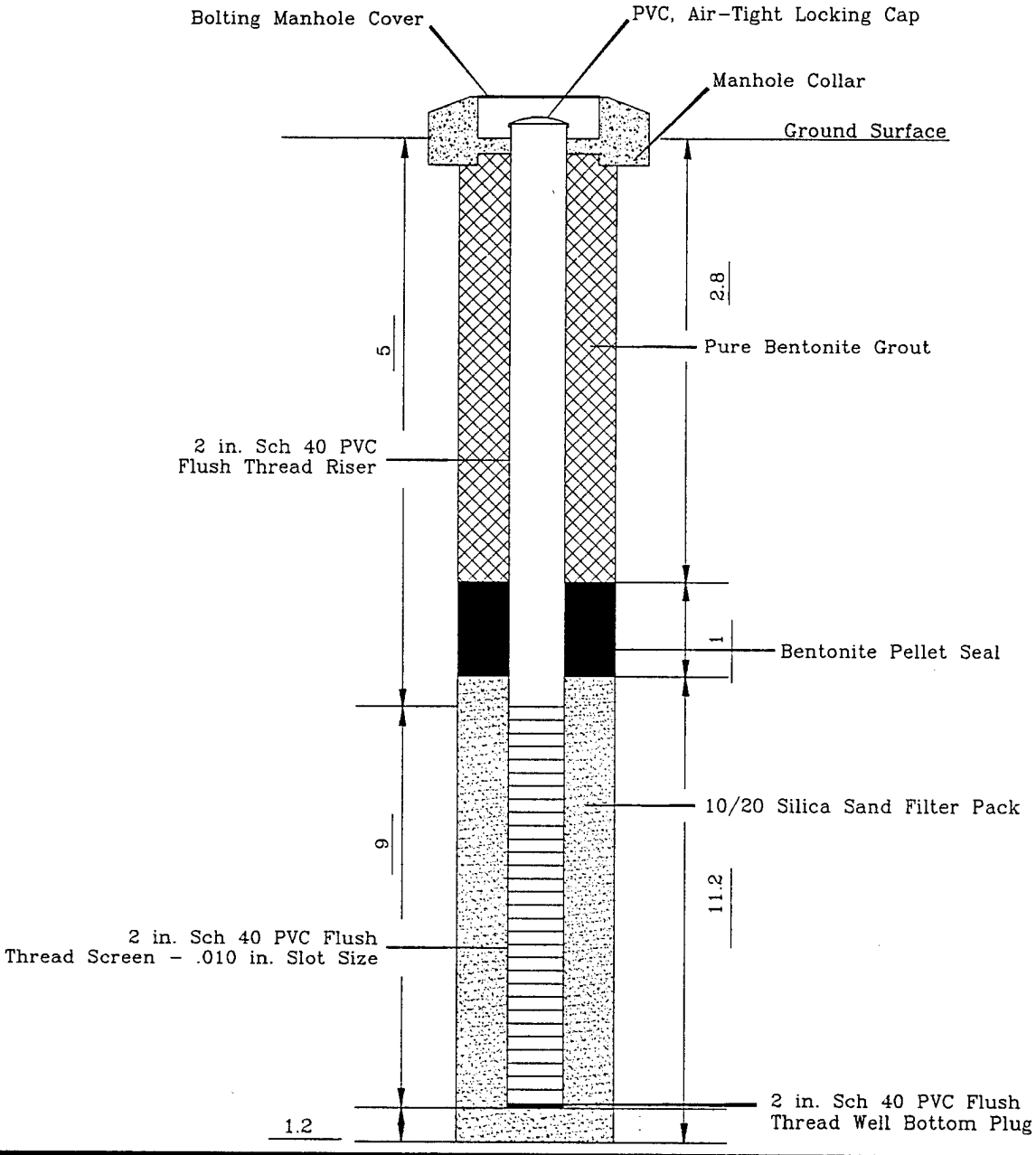


MONITORING WELL OR PIEZOMETER CONSTRUCTION LOG

Well No. 801-001MW

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

Project:	Minnesota ANGB SI	Date Installed:	August 4, 1995
Town/City:	Minneapolis	Drilling Contractor:	Maxim Technologies, Inc.
County:	Hennepin State: Minnesota	Drilling Method:	Hollow-Stem Auger
TOC Elev:	821.03' (MSL)	Borehole Diameter:	10 1/4"
Ground Elev.:	821.11' (MSL)	Development Technique:	Bail and Surge
Water Level:	2.94' (8/17/95) TOC		
Total Well Depth:	14.2		Not To Scale

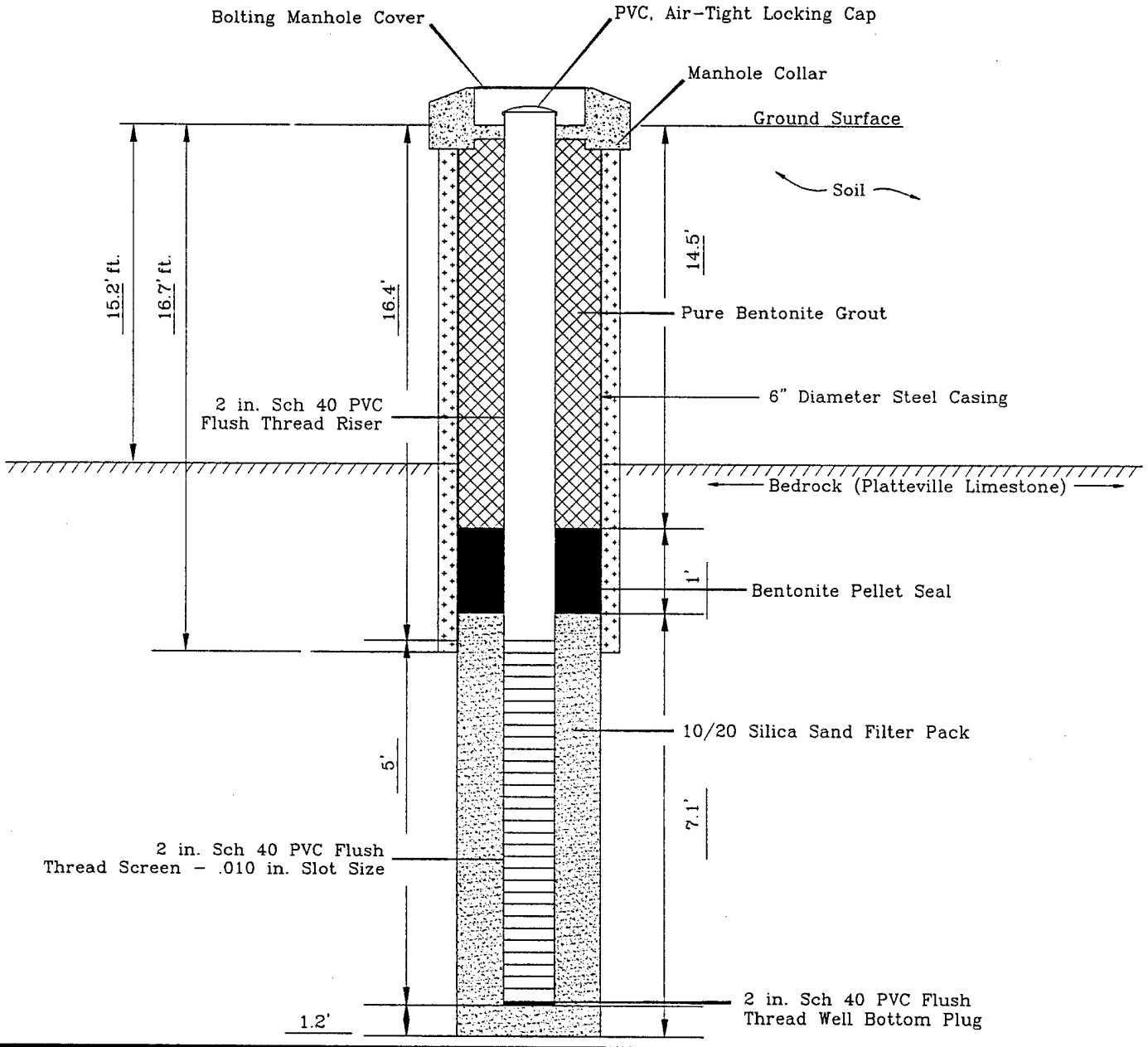


MONITORING WELL OR PIEZOMETER CONSTRUCTION LOG

Well No. 651-001MWA

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

Project:	Minnesota ANGB SI	Date Installed:	August 19, 1995
Town/City:	Minneapolis	Drilling Contractor:	Maxim Technologies, Inc.
County:	Hennepin State: Minnesota	Drilling Method:	Mud and Air Rotary
TOC Elev:	821.12' (MSL)	Borehole Diameter:	Variable
Ground Elev.:	821.10' (MSL)	Development Technique:	Bail and Surge
Water Level:	12.73' (10/26/95) TOC		
Total Well Depth:	21.4'		Not To Scale



MONITORING WELL OR PIEZOMETER CONSTRUCTION LOG

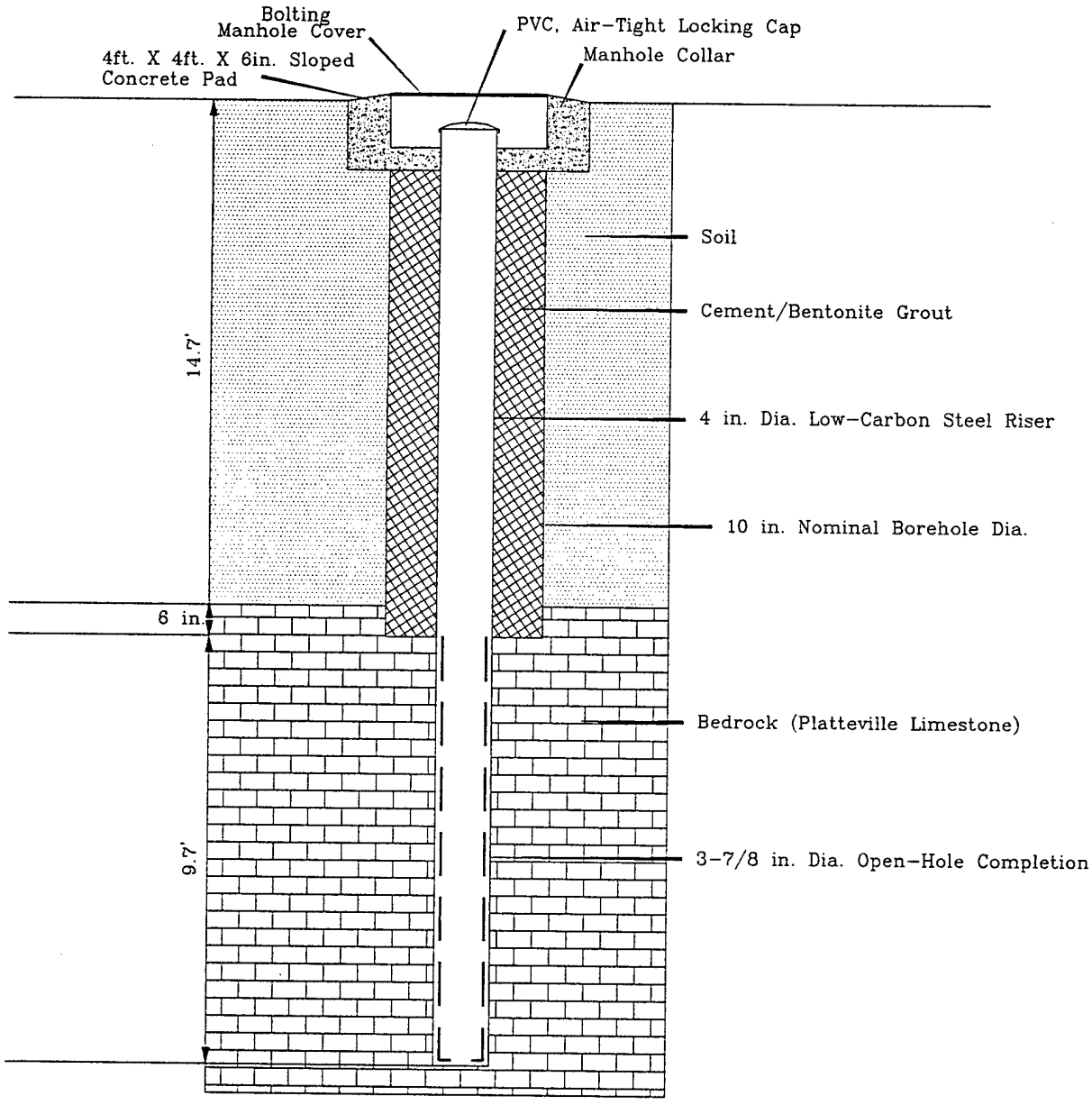
Well No. 651-001MWB

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

MINN\WELLS\MWELLS JANUARY 1996

Project:	Minnesota ANGB SI	Date Installed:	August 5, 1995
Town/City:	Minneapolis	Drilling Contractor:	Maxim Technologies Inc.
County:	Hennepin State: Minnesota	Drilling Method:	Hollow-Stem Auger/ Air Rotary
TOC Elev:	818.98' (MSL)	Borehole Diameter:	Variable
Ground Elev.:	818.95' (MSL)	Development Technique:	Submersible Pump
Water Level:	10.25' (8/17/95) TOC		
Total Well Depth:	25'		

Not To Scale



MONITORING WELL CONSTRUCTION LOG

Well No. 651-002MW

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

APPENDIX C

FIELD GC SCREENING RESULTS

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FIELD GC DATA SUMMARY

SITE: Minneapolis ANGB
GAIN: 1,000
CARRIER GAS FLOW: 12 µl/min

INJECTION VOLUME: 100 µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: 450 sec

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
1	100 PPB			100	100	100	200	100	600		
2	1 PPM			1,000	1,000	1,000	2,000	1,000	6,000		
3	10 PPM			10,000	10,000	10,000	20,000	10,000	60,000		
4	AIR BLANK			21	61	148	314	197	741		
5	Potable Water	—	10ml	23	13	58	98	6	198		
6	651-001 BH	FIRST INT. 0.5-2.0	14	ND	6	4	ND	ND	10		
7	651-001 BH	3.5-5.0	20	ND	2	2	ND	ND	4		
8	651-001 BH	8.5-10.0	17	ND	1	ND	ND	ND	1		
9	651-002 BH	0-1.5	14	1	1	6	58	ND	66		
10	100 PPB			107	100	86	170	59	522		
	RECAL			100	100	100	200	100	600		
11	AIR BLANK			8	ND	ND	ND	ND	8		
12	Potable Water	—	10ml	ND	1	ND	ND	ND	1		
13	651-002 BH	3.5-5.0	20g	1	1	3	28	ND	33		
14	651-002 BH	8.5-10.0	23g	ND	1	ND	ND	ND	1		
15	100 PPB			104	96	81	145	ND	426		

Calibration Information		Analytes Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
0.1 ppm	Retention Time	65.4	133.8	279.4	301.6	355.0			
	Response	254.3	110.8	61.29	58.23	11.22			
1 ppm	Retention Time	66.0	133.7	279.4	301.0	354.3			
	Response	4230	2569	1603	1219	270			
10 ppm	Retention Time	66.8	135.7	282.4	303.7	356.3			
	Response	17376	18129	12557	9090	1696			

OPERATOR: JByrd Jr

DATE: 1 Aug 95

FIELD GC DATA SUMMARY

SITE: Minneapolis ANGB
GAIN: 1,000
CARRIER GAS FLOW: 12.5 ml/min

INJECTION VOLUME: 100 µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: ~~440 sec~~ 460 sec JB

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
1	100 PPB			100	100	100	202	113	615		
2	1 PPM			1,000	1,000	1,000	2,000	1,000	6,000		
3	10 PPM			10,000	10,000	10,000	20,000	10,000	60,000		
4	AIR BLANK ★			16	71	148	314	159	708		
5	AIR BLANK			ND	ND	ND	ND	ND	ND		
6	651-003BH	0,0-2,0	14g	ND	1	ND	ND	ND	1		
7	651-003BH	3,5-5,0	14g	ND	1	ND	ND	ND	1		
8	651-003BH	8,5-10,0	17g	10	14	5	ND	ND	29		
9	652-004BH	0,0-1,5	17g	ND	ND	ND	6	ND	6		
10	652-004BH	3,5-5,0	17	ND	1	ND	ND	ND	1		
11	100 PPB			86 (64.5)	61 (131.4)	59 (274.1)	108 (295.2)	28 (348.6)	342		
	RECAL			100	100	100	200	100	600		
12	AIR BLANK			ND	ND	ND	ND	ND	ND		
13	652-004BH	8,5-10,0	17g	ND	104	1	ND	ND	105		
14	652-005BH	0,0-1,5	17g	ND	1	ND	ND	ND	1		
15	652-005BH	3,5-5,5	14g	ND	313	ND	ND	ND	313		
16	100 PPB			95 (64.9)	96 (132.5)	96 (276.2)	192 (297.1)	93 (352.3)	572		
17	AIR BLANK			ND	ND	ND	ND	ND	ND		
18	652-005BH	8,5-10,0	17g	ND	740	7	ND	ND	747		
19	652-005BH	13,5-15,0	20g	5	114	ND	ND	ND	119		

★ Different syringe than used on STANDARDS.

Calibration Information		Analytes Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
0.1 ppm	Retention Time	62.4	127.6	266.1	286.4	337.6			
	Response	280.7	140	64.75	62.85	28.1			
1 ppm	Retention Time	63.6	129	268.5	289.3	342			
	Response	3726	2762	2105	1634	667			
10 ppm	Retention Time	63.7	130.6	271.7	292.0	344.6			
	Response	17518	14949	8932	6721	2304			

OPERATOR: JByrd Jr
DATE: 2 Aug 95

FIELD GC DATA SUMMARY

SITE: 2 August 1995 Page 2
GAIN: _____
CARRIER GAS FLOW: _____
INJECTION VOLUME: _____
GC OVEN TEMP: _____
ANALYSIS TIME: _____

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
20	652-006 BH	0.0 - 1.5	17g	ND	2	ND	ND	ND	2		
21	652-006 BH	3.5 - 5.0	20g	ND	1 x 4	ND	ND	ND	1 x 4		
22	652-006 BH	8.5 - 10.0	14g	ND	ND	ND	ND	ND	ND		
23	100 PPB	XXXX	XXXX	87 65.4	75 133.6	63 278.4	110 299.4	54 354.1	389	XXXX	XXXX
	ReCAL	XXXX	XXXX	100	100	100	200	100	600	XXXX	XXXX
24	AIR BLANK	XXXX	XXXX	ND	ND	ND	ND	ND	ND	XXXX	XXXX
25	652-006 BH	13.5 - 15.0	17g	ND	ND	ND	ND	ND	ND		

Calibration Information		Analytes: Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
0.1 ppm	Retention Time								
	Response								
1 ppm	Retention Time								
	Response								
10 ppm	Retention Time								
	Response								

OPERATOR: J Byrd Jr
DATE: 2 Aug 95

FIELD GC DATA SUMMARY

SITE: Minneapolis ANGB
GAIN: 1,000
CARRIER GAS FLOW: 14 ml/min

INJECTION VOLUME: 100 µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: 400 sec.

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
1	100 PPB			100	100	100	200	100	600		
2	1 PPM			1,000	1,000	1,000	2,000	1,000	6,000		
3	10 PPM			10,000	10,000	10,000	20,000	10,000	60,000		
4	AIR BLANK			30	129	217	469	265	1,110		
5	AIR BLANK			2	24	119	248	106	499		
6	AIR BLANK			6	2	24	43	ND	75		
7	652-007 BH	1.0-2.0	14g	ND	2,720	413	12	17	3,162		
8	652-007 BH	2.5-3.5	17g	ND	9,770	579	1,270	4,000	15,619		
9	652-007 BH	4.0'-5.0	17g	ND	26,120	956	2,330	4,900	34,306	50µl injection	
10	652-007 BH	9.0-10.0	20g	ND	945	29	46	ND	1,020	50µl injection	
11	652-007 BH	14.0-15.0	20g	ND	194	32	38	ND	264		
12	10 PPM			10,800	9,390	7,360	15,000	6,150	48,700		
	RECAL			10,000	10,000	10,000	20,000	10,000	60,000		
13	AIR BLANK			6	163	288	609	298	1,364		
14	Re-Shot 652-007 BH	2.5-3.5	17g	ND	438	72	100	ND	610	10µl injection	
15	Re-Shot 652-007 BH	4.0-5.0	17g	ND	3,940	58	66	ND	4,064	10µl injection	
16	Re-SHOT 652-007 BH	9.0-10.0	20g	3	141	23	24	ND	191	10µl injection	
17	1 PPM			921	841	654	1,310	548	4,274		
	RECAL			1,000	1,000	1,000	2,000	1,000	6,000		
18	AIR BLANK			6	34	25	35	ND	100		

Calibration Information		Analytes Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
	Retention Time	56.3	115	240	258.4	303.4			
0.1 ppm	Response	190.1	80	45	39	8.5			
	Retention Time	56.7	115	239.8	258.4	304.5			
1 ppm	Response	2891	1846	1073	815	247			
	Retention Time	57.4	116.4	242.1	260	305.6			
10 ppm	Response	16130	14585	10078	7283	1793			

OPERATOR: J Bryant Jr

DATE: 3 Aug 95

FIELD GC DATA SUMMARY

SITE: Minneapolis ANGB
GAIN: 1,000
CARRIER GAS FLOW: 14 µl/min

INJECTION VOLUME: 100 µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: 400 sec

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
19	651-001 MW	0.5-1.5	17g	ND	13	18	25	ND	56		
20	651-001 MW	4.0-5.0	17g	1	19	9	13	ND	42		
21	651-001 MW	9.0-10.0	14g	ND	6	2	ND	ND	8		
22	651-001 MWA	0.5-1.5	14g	ND	5	ND	ND	ND	5		
23	651-001 MWA	4.0-5.0	20g	ND	4	ND	ND	ND	4		
24	100 PPB			95	76	48	69	ND	288		
	RECAL										
25	100 PPB			100	77	48	76	22	323		
	RECAL			100	100	100	200	100	600		
26	AIR BLANK			ND	6	3	ND	ND	9		
27	651-001 MWA	9.0-10.0	20g	ND	3	ND	ND	ND	3		

Calibration Information		Analytes Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
0.1 ppm	Retention Time								
	Response								
1 ppm	Retention Time								
	Response								
10 ppm	Retention Time								
	Response								

OPERATOR: J Byrd Jr

DATE: 3 Aug 95

(6)

FIELD GC DATA SUMMARY

SITE: Minneapolis ANGB
GAIN: 1,000
CARRIER GAS FLOW: 14 µl/min

INJECTION VOLUME: 100µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: 400 sec 420 sec JB

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
1	100 PPB			NO	O-Xylene.			Adjust 364	DRV		
2	100 PPB			100	100	100	200	100	600		
3	1 PPM			1,000	1,000	1,000	2,000	1,000	6,000		
4	10 PPM			10,000	10,000	10,000	20,000	10,000	60,000		
5	AIR BLANK			32	151	349	1,547	663	2,742		
6	651-001 MWA	14,0-15,0	14g	47	32	188	792	396	1,455		
7	AIR BLANK			1	3	49	194	91	338		
8	RESHOT 651-001 MWA	14,0-15,0	14g	6	2	29	111	54	202		
9	1 PPM			977	876	888	1,790	891	5,422		

Calibration Information		Analytes Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
0.1 ppm	Retention Time	61.9	124.4	255.2	274.1	324			
	Response	240	88	27	31	12			
1 ppm	Retention Time	62.6	124.8	256	275.2	325.8			
	Response	2925	1514	636	639	257			
10 ppm	Retention Time	62.9	125.8	257.3	275.4	325.6			
	Response	19056	14000	6658	6371	2476			

OPERATOR: JByrd JR DATE: 4 Aug 95

FIELD GC DATA SUMMARY

SITE: Minneapolis ANGB
GAIN: 1,000
CARRIER GAS FLOW: 14 ml/min

INJECTION VOLUME: 100 µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: ~~400 sec~~ 420

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
1	100 PPB			100	100	101	205	119	625		
2	1 PPM			MISSED 5407							
3	1 PPM			Something Wrong W/ GC							
4	1 PPM			1,000	1,000	1,000	2,000	1,010	6,010		
5	10 PPM			10,000	10,000	10,000	20,000	10,000	60,000		
6	AIR BLANK			97	355	426	1,670	708	3,256		
7	AIR BLANK			21	101	263	990	471	1,846		
8	AIR BLANK			20	34	182	659	297	1,192		
9	1 PPM			909	925	993	2,180	1,050	6,057		
10	AIR BLANK			22	40	137	439	204	842		
11	651-002 MW	2.0-3.0	20g	1	4	52	184	90	331		
12	651-002 MW	4.0-5.0	14g	ND	4	119	10	123	256		
13	651-002 MW	9.0-10.0	17g	ND	2	18	51	34	105		
14	651-002 MW	14.0-15.0	20g	12	2	11	23	ND	48		
15	AIR BLANK			4	ND	2	ND	ND	6		

Calibration Information		Analytes Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
0.1 ppm	Retention Time	66.0	131.7	272.0	292.2	345.3			
	Response	161	57	21	24	11			
1 ppm	Retention Time	67.3	133.4	274.9	295.7	351.0			
	Response	3234	1613	674	656	221			
10 ppm	Retention Time	68.5	135.3	278.1	297.6	352.6			
	Response	18214	13066	5897	5648	2003			

OPERATOR: J Byrd Jr

DATE: 5 Aug 95

FIELD GC DATA SUMMARY

SITE: Minneapolis ANGB
GAIN: 1000
CARRIER GAS FLOW: 14.0 µl/min

INJECTION VOLUME: 100 µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: 400 sec

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
1	100 PPB			NO	O-XYLENE						
2	100 PPB			100	100	100	200	102	602		
3	1 PPM			1,000	1,000	1,000	2,000	1,000	6,000		
4	10 PPM			10,000	10,000	10,000	20,000	10,000	60,000		
5	AIR BLANK			1	2	5	4	ND	12		
6	591-001 BH	2.0-3.0	17g	1	3	6	10	5	25		
7	591-001 BH	4.0-5.0	20g	2	1	ND	ND	ND	3		
8	591-001 BH	9.0-10.0	14g	1	1	ND	ND	ND	2		
11	591-001 BH	13.5-14.5	20g	1	1	1	ND	ND	3		
12	591-001 BH	16.5-17.5	17g	2	ND	1	ND	ND	3		
13	100 PPB			75	59	56	104	78	372		
	RECAL			100	100	100	200	67	567		
14	100 PPB AIR BLANK			103	102	101	206	69	581		
	RECAL			100	100	100	200	100	600		
15	AIR BLANK			2	ND	ND	ND	ND	2		
16	591-004 BH	0.5-1.5	14g	2	ND	ND	ND	ND	2		
17	591-004 BH	4.0-5.0	20g	2	1	ND	ND	ND	3		
18	591-004 BH	9.0-10.0	11g	2	ND	ND	ND	ND	2		
19	591-004 BH	13.5-14.5	17g	2	ND	ND	ND	ND	2		
20	591-004 BH	15.5-16.5	14g	11	ND	2	ND	ND	13		

Calibration Information		Analytes Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
0.1 ppm	Retention Time	66.6	126.5	254.9	273.3	323.2			
	Response	155	94	60	54	24			
1 ppm	Retention Time	67.4	127.7	257.3	276.2	325.8			
	Response	2750	2327	1699	1329	463			
10 ppm	Retention Time	67.4	127.7	256.8	275.2	325.3			
	Response	11994	17474	14915	14566	5664			

OPERATOR: J Boyd Jr
DATE: 8 Aug 95

FIELD GC DATA SUMMARY

SITE: Minneapolis AWGB
GAIN: 1,000
CARRIER GAS FLOW: 14.0 µl/min

INJECTION VOLUME: 100µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: 400 sec

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
21	100 PPB			102	91	101	202	100	596		
22	AIR BLANK			2	ND	ND	ND	ND	2		
23	591-004BH	18.5-19.0	37g	60	24	ND	ND	ND	84		
24	591-002BH	0.5-1.5	14g	ND	ND	ND	ND	ND	ND		
25	591-002BH	4.0-5.0	17g	2	ND	ND	ND	ND	2		
26	591-002BH	9.0-10.0	17g	2	ND	ND	ND	ND	2		
27	591-002BH	13.5-14.0	17g	3	ND	2	ND	ND	5		
28	100 PPB			100	83	87	153	87	510		
	RECAL			100	100	100	200	99	599		
29	AIR BLANK			3	ND	ND	ND	ND	3		
30	591-003BH	0.5-1.5	17g	3	ND	ND	ND	ND	3		
31	591-003BH	4.0-5.0	20g	3	ND	ND	ND	ND	3		
32	591-003BH	9.0-10.0	17g	3	ND	2	ND	ND	5		
33	591-003BH	14.0-15.0	20g	4	ND	ND	ND	ND	4		
34	873-001BH	1.5-2.5	17g	3	ND	2	ND	ND	5		
35	100 PPB			94	89	79	188	102	552		
36	AIR BLANK			4	ND	3	ND	ND	7		
37	873-001BH	4.0-5.0	14g	3	ND	4	ND	ND	7		
38	873-001BH	9.0-10.0	17g	3	ND	4	ND	ND	7		
39	100 PPB			1	79	63	116	51	310		

Calibration Information		Analytes Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
# 21	Retention Time	68.2	128.6	258.6	277.3	328.5			
0.1 ppm	~~Response~~ # 28 RT	70.1	130.5	261.0	279.4	329.3			
#35	Retention Time	71.4	131.7	261.6	279.4	329.6			
0.1 ppm	Response								
	Retention Time								
10 ppm	Response								

OPERATOR: JByrd Jr
DATE: 8 Aug 95

FIELD GC DATA SUMMARY

SITE: Minneapolis ANGB
GAIN: 1,000
CARRIER GAS FLOW: 14 ml/min

INJECTION VOLUME: 100 µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: 400 sec

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
1	100 PPB			NO	E.B, M·P·X, n O-X Packed						
2	100 PPB			100	100	100	200	101	601		
3	1 PPM			1,000	1,000	1,000	2,000	1,000	6,000		
4	10 PPM			10,000	10,000	10,000	29,000	19,000	69,000		
5	AIR BLANK			7	9	25	44	32	117		
6	AIR BLANK			2	ND	2	3	ND	7		
	R.T.'s have drifted.			Need to Recalibrate and							
	Reset AIR flow.										
7	100 PPB			MISSED SHOT							
8	100 PPB			100	100	100	200	100	600		
9	1 PPM			1,000	1,000	1,000	2,000	1,000	6,000		
10	10 PPM			10,000	10,000	10,000	29,000	19,000	69,000		
11	AIR BLANK			5	8	19	35	13	80		
12	591-001 MW	2.0-3.0	20g	6	3	7	27	ND	43		
13	591-001 MW	4.0-5.0	17g	1	1	ND	ND	ND	2		
14	591-001 MW	9.0-10.0	20g	1	1	ND	ND	ND	2		
15	591-001 MW	14.0-15.0	17g	2	1	2	ND	ND	5		
16	100 PPB			95 (74.0)	91 (133.8)	74 (252.2)	134 (269)	39 (311.2)	433		
	RECAL			100	100	100	200	100	600		
17	AIR BLANK			ND	ND	ND	ND	ND	ND		

Calibration Information		Analytes Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
#2	Retention Time	~~64.2~~ 73.8	135.0	266.9	285.6	334.6			
0.1 ppm	Response	~~153~~ 165.4	89	57	43	12			
# 3	Retention Time	74.0	135.3	267.4	285.8	335.7			
1 ppm	Response	2357	2000	1338	960	238			
#4	Retention Time	75.4	137	269.3	288.2	338.0			
10 ppm	Response	15597	17651	12931	10974	3124			

OPERATOR: J Byrd Jr
DATE: 9 Aug 95

FIELD GC DATA SUMMARY

SITE: Minneapolis ANGB
GAIN: 1000
CARRIER GAS FLOW: 14 ml/min

INJECTION VOLUME: 100 µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: 400 sec

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
18	873-002BH	1.5-2.5	17g	~~98~~ 1	1	1	ND	ND	~~98~~ 3		
19	873-002BH	4.0-5.0	17g	ND	ND	ND	ND	ND	ND		
20	873-002BH	9.0-10.0	23g	ND	ND	ND	ND	ND	ND		
21	873-003BH	1.5-2.5	20g	ND	ND	ND	ND	ND	ND		
22	873-003BH	4.0-5.0	17g	22	ND	ND	ND	ND	22		
23	100 PPB			30 [74.9]	ND	ND	ND	ND	30		
24	100 PPB			24 [78.9]							
				STANDARD	IS	FLAT					
NO I was wrong. Column is clogged.											
1	100 PPB			100	100	100	200	102	602		
2	1 PPM			1,000	1,000	1,000	2,000	1,000	6,000		
3	10 PPM			10,000	10,000	10,000	20,000	10,000	60,000		
4	AIR BLANK			4	6	14	29	11	64		
5	Re-SHOT 873-002 BH	4.0-5.0	17g	3	4	11	21	23	62		
6	Re-SHOT 873-002BH	9.0-10.0	23g	2	ND	ND	ND	ND	2		
7	Re-SHOT 873-003BH	1.5-2.5	20g	1	ND	ND	ND	ND	1		
8	Re-SHOT 873-003BH	4.0-5.0	17g	1	ND	ND	ND	ND	1		
9	873-003BH	9.0-10.0	26g	1	ND	ND	ND	ND	1		
10	100 PPB			95 [67.8]	82 [127.4]	67 [255.2]	139 [274.1]	75 [323.2]	458		
	RECAL			100	100	100	200	100	600		

Calibration Information		Analytes Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
#8	Retention Time	74.5	129.6	248.8	266.1	310.4			
0.1 ppm	Response	167	76	52	36	11			
#9	Retention Time	75.4	130.4	249.3	266.1	309.8			
1 ppm	Response	2057	1703	1091	726	196			
#10	Retention Time	76.1	131.2	250.4	267.4	311.7			
10 ppm	Response	13576	14881	10437	8110	2207			

OPERATOR: J Byrd Jr

DATE: 9 Aug 95

FIELD GC DATA SUMMARY

SITE: Minneapolis ANGB
GAIN: 1,000
CARRIER GAS FLOW: 14 ml/min

INJECTION VOLUME: 100 µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: 400 sec

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
11	AIR BLANK			1	ND	ND	ND	ND	1		
12	801-002 BH	1.5-2.5	17g	1	ND	3	48	9	61		
13	801-002 BH	4.0-5.0	14g	1	ND	ND	ND	ND	1		
14	801-002 BH	9.0-10.0	17g	1	ND	ND	ND	ND	1		
15	801-001 BH	1.5-2.5	17g	1	ND	ND	ND	ND	1		
16	801-001 BH	4.0-5.0	17g	1	ND	ND	ND	ND	1		
17	100 PPB			95 [68.0]	84 [127.4]	75 [255.2]	151 [274.6]	78 [322.4]	483		
	RECAL			100	100	100	200	100	600		
18	AIR BLANK			1	ND	ND	ND	ND	1		
19	801-001 BH	9.0-10.0	11g	ND	ND	ND	ND	ND	ND		
20	801-001 BH RE-SHOT	9.0-10.0	11g	ND	ND	ND	ND	ND	ND	50 µl inj	

Calibration Information		Analytes Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
#1	Retention Time	67.2	126.0	253.0	271.4	320.2			
0.1 ppm	Response	123	53	30	24	13			
#2	Retention Time	67.0	125.7	252.2	270.9	320.2			
1 ppm	Response	2236	1537	980	728	291			
#3	Retention Time	67.6	126.8	253.8	272.5	321.3			
10 ppm	Response	9156	11768	9049	7837	3278			

OPERATOR: J Byrd Jr

DATE: 9 Aug 95

FIELD GC DATA SUMMARY

SITE: Minneapolis ANGB
GAIN: 1,000
CARRIER GAS FLOW: 14 µl/min

INJECTION VOLUME: 100 µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: 400 sec

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
1	100 PPB			100	100	100	200	100	600		
2	1 PPM			1,000	1,000	1,000	2,000	1,000	6,000		
3	10 PPM			MISSED SAMPLE							
4	10 PPM			10,000	10,000	10,000	20,000	10,000	60,000		
5	AIR BLANK			2	9	31	238	117	397		
6	Re-Re-SHOT 801-001BH	9.0-10.0	Hg							10 µl injection	
6	AIR BLANK			ND	2	8	157	76	243		
7	Re-Re-SHOT 801-001BH	9.0-10.0	11g	ND	ND	ND	ND	ND	ND	10 µl injection	
8	200 µl injection AIR BLANK			ND	1	2	88	49	140		
9	801-003BH	1.5-2.5	14g	ND	1	2	92	52	147		
10	801-003BH	4.0-5.0	14g	1	ND	ND	66	35	102		
11	801-003BH	9.0-10.0	20g	1	ND	ND	51	28	80		
12	100 PPB			96 [62.8]	84 [119.3]	78 [238.4]	188 [255.4]	101 [301.3]	547		
	RECAL			100	100	100	200	100	600		
18	AIR BLANK			ND	ND	ND	20	12	32		
19	Re-SHOT 801-003BH	1.5-2.5	14g	1	ND	ND	26	15	42	~~150 µl injection~~	
20	Re-SHOT 801-003BH	4.0-5.0	14g	1	ND	ND	26	15	42	150 µl injection	
21	Re-SHOT 801-003BH	9.0-10.0	20g	1	ND	ND	19	10	30		

12 — 100 PPB — Let AC Autocycle to see if that cleans out MP-X & O-X peaks. Could be asphalt that is being carried over.

Calibration Information		Analytes: Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
#1	Retention Time	61.0	116.4	232.0	249.6	294.6			
0.1 ppm	Response	143	69	51	42	15			
#2	Retention Time	61.6	117.0	233.2	250.4	294.9			
1 ppm	Response	2439	1792	1395	1112	400			
#4	Retention Time	62.4	118.2	235.0	252.2	297.3			
10 ppm	Response	14264	14886	12808	11805	4868			

OPERATOR: JByrd JR

DATE: 10 Aug 95

FIELD GC DATA SUMMARY

SITE: Minneapolis AWGB
GAIN: 1000
CARRIER GAS FLOW: 14 µl/min

INJECTION VOLUME: 100 µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: 400 sec

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
22	801-001MW	2.0-3.0	20g	1	ND	ND	16	10	27		
23	801-001MW	4.0-5.0	23g	1	ND	ND	15	9	25		
24	100 PPB			100 (63.3)	88 (119.7)	79 (239)	140 (256)	72 (303.2)	479		
	RECAL			100	100	100	200	100	600		
25	AIR BLANK			1	ND	ND	9	7	17		
26	801-001MW	9.0-10.0	26g	3	ND	ND	53	33	89		

Calibration Information		Analytes: Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
#24	Retention Time	63.3	119.7	239.0	256.8	303.2			
0.1 ppm	Response								
	Retention Time								
1 ppm	Response								
	Retention Time								
10 ppm	Response								

OPERATOR: J Byrd Jr
DATE: 10 Aug 95

FIELD GC DATA SUMMARY

SITE: Minneapolis AVGB
GAIN: 1,000
CARRIER GAS FLOW: 14 gal/min

INJECTION VOLUME: 100 µl
GC OVEN TEMP: 45°C
ANALYSIS TIME: 400 sec

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
1	100 PPB			Missed Shot							
2	100 PPB			100	100	100	200	100	600		
3	1 PPM			1,000	1,000	1,000	2,000	1,000	6,000		
4	10 PPM			10,000	10,000	10,000	20,000	10,000	60,000		
5	AIR BLANK			3	8	24	135	71	241		
6	250 µl injection AIR BLANK			ND	1	1	59	33	94		
7	AIR BLANK			ND	1	ND	33	17	51		
8	~~AIR BLANK 100 PPB~~ 9A			ND	ND	ND	19	10	29		
9	AIR BLANK			ND	ND	ND	15	9	24		
10	AIR BLANK			ND	ND	ND	12	6	18		
11	100 PPB			100 [63.0]	87 [119.1]	85 [238.4]	184 [256.5]	94 [302.6]	550		
	RECAL			100	100	100	200	100	600		
12	AIR BLANK			1	ND	ND	8	5	14		
13	873-001 MW	2.0-3.0	14g	1	1	ND	6	ND	8		
14	873-001 MW	4.0-5.0	14g	ND	ND	ND	6	ND	6		
15	873-001 MW	9.0-10.0	17g	3	ND	ND	8	5	16		
16	100 PPB			92 [63.8]	85 [120.4]	81 [240.0]	143 [257.6]	74 [304.2]	475		

Calibration Information		Analytes Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
#2	Retention Time	61.2	116.9	233.8	250.9	296.0			
0.1 ppm	Response	148	75	54	44	16			
#3	Retention Time	61.9	117.7	235.2	252.5	297.8			
1 ppm	Response	2600	1999	1730	1398	517			
#4	Retention Time	62.7	118.9	236.8	254.4	299.7			
10 ppm	Response	13441	14354	13244	12272	5037			

OPERATOR: JByall Jr

DATE: 11 Aug 95

FIELD GC DATA SUMMARY

SITE: Minneapolis ANGB
GAIN: 1,000
CARRIER GAS FLOW: 14 ml/min
INJECTION VOLUME: 100 µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: 400 sec

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
1	100 PPB			100	100	100	200	100	600		
2	1 PPM			1,000	1,000	1,000	2,000	1,000	6,000		
3	10 PPM			10,000	10,000	10,000	20,000	10,000	60,000		
4	AIR BLANK			3	13	44	236	113	409		
5	300 µl injection AIR BLANK			3	6	16	218	104	347		
6	300 µl injection AIR BLANK			ND	1	ND	128	53	182		
7	AIR BLANK			1	ND	ND	62	26	89		
8	AIR BLANK			1	ND	ND	31	14	46		
9	AIR BLANK			1	ND	ND	23	12	36		
10	100 PPB			79 [62.8]	65 [119.4]	49 [238.8]	130 [257]	76 [303.2]	399		
	RECAL			100	100	100	200	100	600		
11	AIR BLANK			ND	4	ND	28	12	44		
12	651-002MW	15.0'	17g	3	16	3	21	12	55		
13	651-002MW	17.0'	23g	ND	11	ND	27	ND	~~38~~ 43	38	
14	651-002MW	20.0'	23g	1	ND	ND	22	11	34		
15	651-002MW	22.0'	14g	41	176	49	270	49	585		
16	1 PPM			873	760	675	1,330	710	4,348		

Calibration Information		Analytes Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
#1	Retention Time	62.6	119.7	239.2	257.3	304.2			
0.1 ppm	Response	125	51	33	24	10			
#2	Retention Time	63.4	120.1	239.8	257.3	303.7			
1 ppm	Response	2540	1739	1247	966	366			
#3	Retention Time	63.4	120.4	240.0	257.6	304.0			
10 ppm	Response	12504	13086	11113	10119	4130			

OPERATOR: J Byrd Jr
DATE: 11 Aug 95

FIELD GC DATA SUMMARY

SITE: Minneapolis ANGB
GAIN: 1000
CARRIER GAS FLOW: 14 ml/min

INJECTION VOLUME: 100 µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: 400 sec

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
1	100 PPB			100	100	100	200	100	600		
2	1 PPM			1,000	1,000	1,000	2,000	1,000	6,000		
3	10 PPM			10,000	10,000	10,000	20,000	10,000	60,000		
4	AIR BLANK			6	10	28	64	33	141		
5	AIR BLANK			1	5	5	6	ND	17		
6	AIR BLANK			ND	4	1	ND	ND	5		
7	591-001 MW	18.0 - 20.0	14g	7	3	5	9	6	30		
8	591-001 MW	20.0 - 22.0	23g	1	2	ND	ND	ND	3		
9	591-001 MW	22.0 - 24.0	17g	1	3	1	ND	ND	5		
10	100 PPB			104 [64.5]	100 [121.2]	97 [241.6]	193 [259.7]	97 [305.8]	591		
11	AIR BLANK			ND	ND	ND	ND	ND	ND		
12	591-001 MW	26.0 - 28.0	20g	ND	1	ND	ND	ND	1		
13	591-001 MW	28.0 - 30.0	11g	ND	1	2	ND	8	11		
14	100 PPB			105 [61.8]	91 [121.8]	87 [242.9]	161 [260.8]	85 [307.4]	529		

Calibration Information		Analytes Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
#1	Retention Time	63.1	119.4	238.2	256.2	302.1			
0.1 ppm	Response	132	65	49	40	14			
#2	Retention Time	63.8	120.1	239.2	256.8	302.6			
1 ppm	Response	2605	1888	1566	1247	455			
#3	Retention Time	63.8	120.9	240.8	258.4	304.2			
10 ppm	Response	12851	14775	13515	12381	5136			

OPERATOR: J Byrd Jr

DATE: 15 Aug 95

FIELD GC DATA SUMMARY

SITE: Minneapolis AW&B
GAIN: 1,000
CARRIER GAS FLOW: 14 ml/min

INJECTION VOLUME: 100 µl
GC OVEN TEMP: 40°C
ANALYSIS TIME: 400 sec

Analysis No.	Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Concentrations (ppb) Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total BETX		
1	100 PPB			100	100	100	200	101	601		
2	4 PPM			1,000	1,000	1,000	4000	1,000	6,000		
3	10 PPM			10,000	10,000	10,000	20,000	10,000	60,000		
4	AIR BLANK			15	12	32	68	38	165		
5	AIR BLANK			3	1	1	ND	ND	5		
6	591-001MW	water	10ml	3	ND	ND	ND	ND	3		
7	801-001MW	water	10ml	3	ND	ND	ND	ND	3		
8	873-001MW	water	10ml	3	1	ND	ND	ND	4		
9	651-002MW	water	10ml	6	28	2	187	ND	223		
10	100 PPB			96 (72.8)	74 (132.6)	74 (261.3)	155 (280.2)	84 (330.4)	483		
	RECAL			100	100	100	200	100	600		
11	~~AIR BLANK~~ MW-4			2	ND	ND	ND	ND	2		
12	MW-4	water	10ml	184	5,910	258	2,250	2,620	11,222		
13	Re-shot MW-4	water	10ml	21	521	51	257	154	1,004	10 µl injected	
14	651-001MWA	water	10ml	1	5	3	ND	ND	9		
15	1 PPM			960 (73.4)	865 (133.6)	764 (263.2)	1,470 (282.1)	763 (332.0)	4,822		

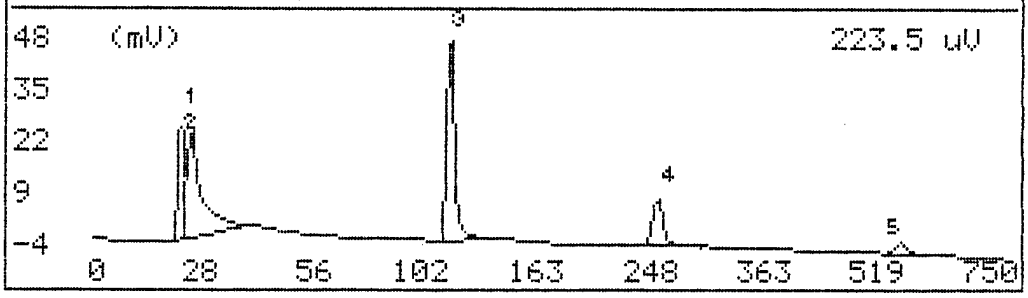
Calibration Information		Analytes Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene			
#1	Retention Time	70.5	129.4	256.0	274.4	322.9			
0.1 ppm	Response	130.9	80	54	41	17			
# 2	Retention Time	70.9	129.6	257.0	275.7	324.8			
1 ppm	Response	2238	2117	1723	1383	457			
#3	Retention Time	71.7	130.8	258.4	277.0	324.5			
10 ppm	Response	12405	15896	13804	12791	5066			

OPERATOR: J Byrd Jr
DATE: 17 Aug 95

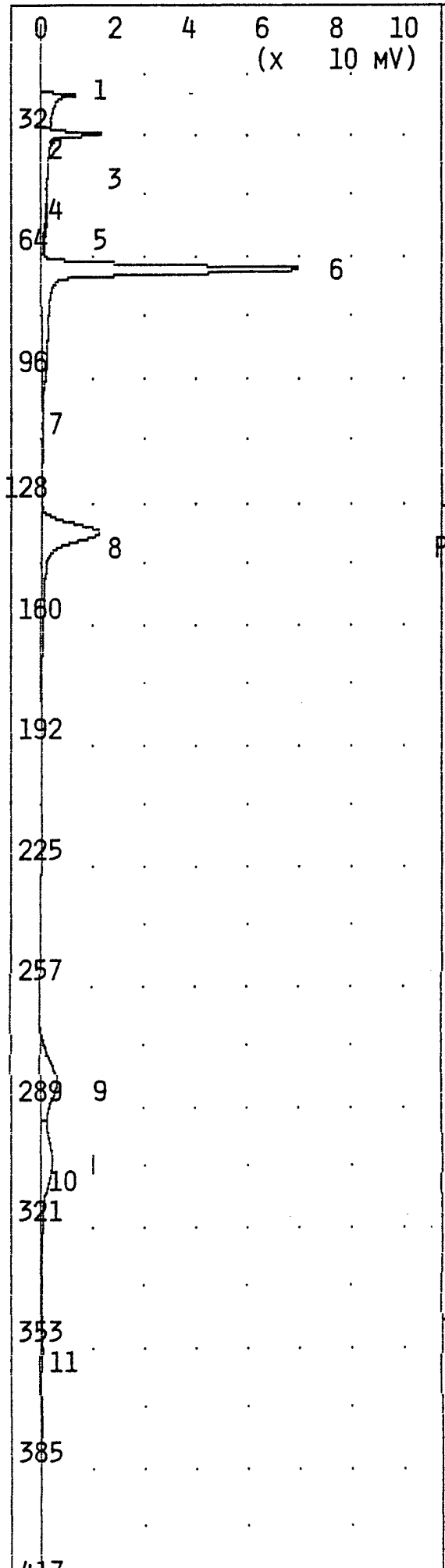
Detector Off 10S+ GC Function Aug 1,95 09:16
-- Analysis No 3 -- Run at - Jan 7,90 00:46 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
1	Unknown	55.86 mVS	-No-	21.4 sec
2	Unknown	100.0 mVS	-No-	23.8 sec
3	Benzene	1.030 ppm	-No-	108.0 sec
4	Toluene	1.150 ppm	-No-	239.4 sec
5	Ethylbenzene	1.190 ppm	-No-	531.6 sec

- Detected 5 peaks. [755 sec]



ANALYSIS #1 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 1,95 12:31
SAMPLE TIME: AUG 1,95 12:24

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	12	ML/MIN
B/F FLOW	12	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	32	C
MAX GAIN	1000	
ANALYSIS TIME	450.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	47.13 MVS	18.6
2	UNKNOWN	0.224 MVS	27.1
3	UNKNOWN	87.19 MVS	29.8
4	UNKNOWN	0.152 MVS	40.2
5	UNKNOWN	3.532 MVS	46.1
6	UNKNOWN	254.3 MVS	65.4
7	UNKNOWN	0.155 MVS	104.8
8	UNKNOWN	110.8 MVS	133.8
9	UNKNOWN	61.29 MVS	279.4
10	UNKNOWN	58.23 MVS	301.6
11	UNKNOWN	11.22 MVS	355.0

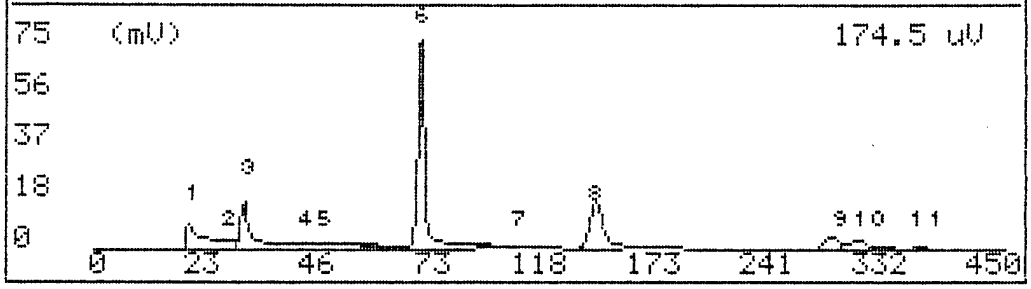
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

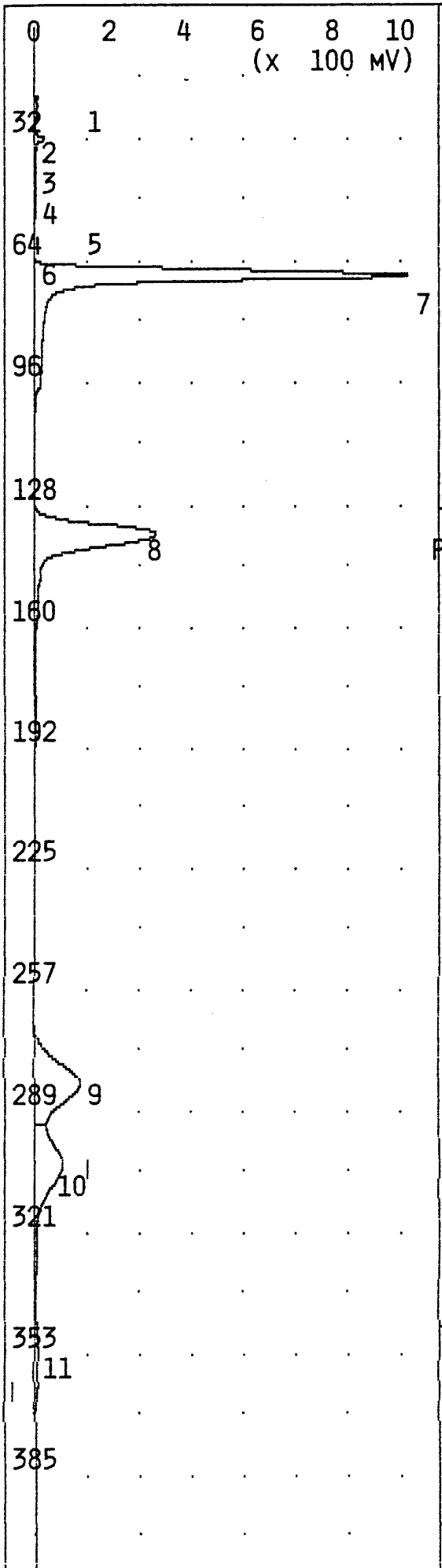
G.C. Ready 10S+ GC Function Aug 1,95 12:38
-- Analysis No 1 -- Run at - Aug 1,95 12:24 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	87.19 mVS	-No-	29.8 sec
4	Unknown	0.152 mVS	-No-	40.2 sec
5	Unknown	3.532 mVS	-No-	46.1 sec
6	benzene	100.0 ppb	-No-	65.4 sec
7	Unknown	0.155 mVS	-No-	104.8 sec
8	toluene	100.0 ppb	-No-	133.8 sec
9	ethylbenzene	100.0 ppb	-No-	279.4 sec
10	m,p-xylene	200.0 ppb	-No-	301.6 sec
11	o-xylene	100.0 ppb	-No-	355.0 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [455 sec]



ANALYSIS #2 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 1,95 12:47
SAMPLE TIME: AUG 1,95 12:40

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	12	ML/MIN
B/F FLOW	12	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	450.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	14.26 MVS	18.8
2	UNKNOWN	66.49 MVS	20.8
3	UNKNOWN	0.644 MVS	27.1
4	UNKNOWN	166.5 MVS	29.8
5	UNKNOWN	0.608 MVS	45.7
6	UNKNOWN	1.613 MVS	48.7
7	BENZENE	1.663 PPM	66.0
8	TOLUENE	2.318 PPM	133.7
9	ETHYLBENZENE	2.616 PPM	279.4
10	M,P-XYLENE	4.188 PPM	301.0
11	O-XYLENE	2.403 PPM	354.3

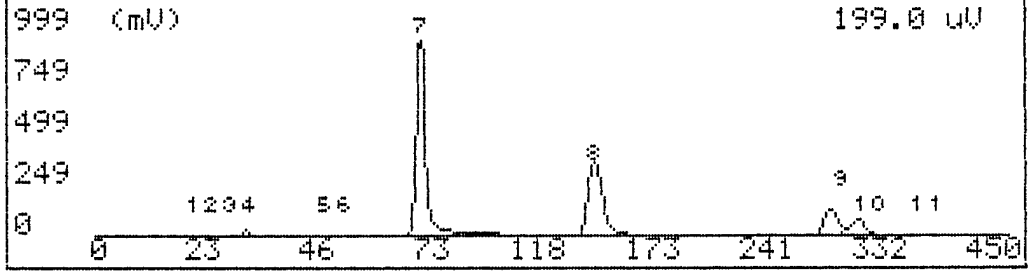
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
1 PPM BTEX

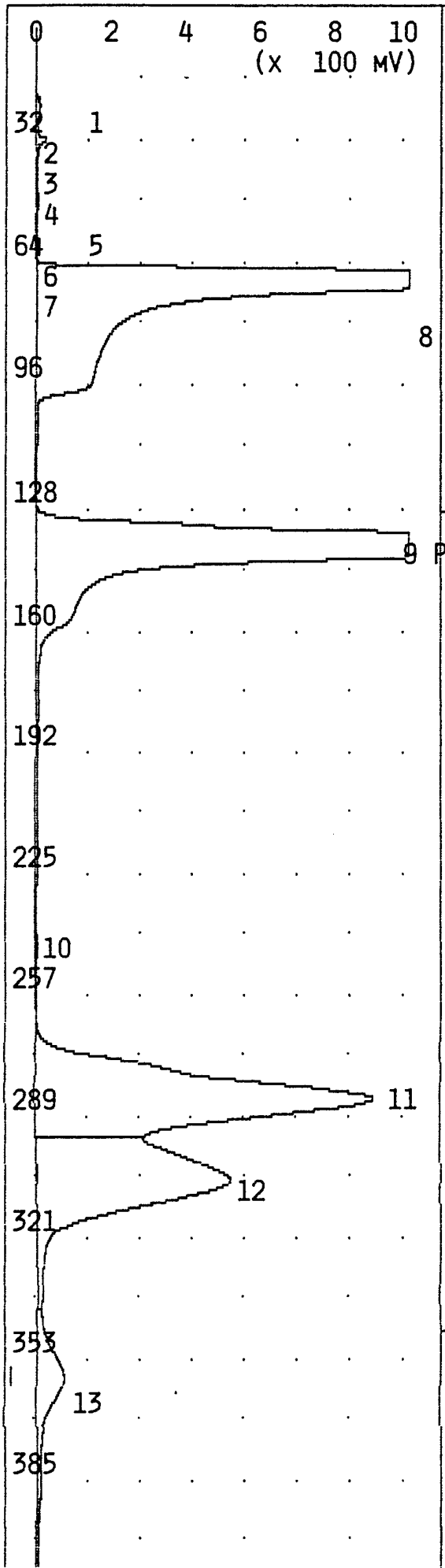
G.C. Ready 10S+ GC Function Aug 1,95 12:51
-- Analysis No 2 -- Run at - Aug 1,95 12:40 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	0.644 mVS	-No-	27.1 sec
4	Unknown	166.5 mVS	-No-	29.8 sec
5	Unknown	0.600 mVS	-No-	45.7 sec
6	Unknown	1.613 mVS	-No-	48.7 sec
7	benzene	1.000 ppm	-No-	66.0 sec
8	toluene	1.000 ppm	-No-	133.7 sec
9	ethylbenzene	1.000 ppm	-No-	279.4 sec
10	m,p-xylene	2.000 ppm	-No-	301.0 sec
11	o-xylene	1.009 ppm	-No-	354.3 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [455 sec]



ANALYSIS #3 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 1,95 13:02
SAMPLE TIME: AUG 1,95 12:54

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	12	ML/MIN
B/F FLOW	12	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	450.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	16.72	MVS	18.8
2	UNKNOWN	85.14	MVS	20.6
3	UNKNOWN	0.196	MVS	27.0
4	UNKNOWN	100.5	MVS	30.0
5	UNKNOWN	0.223	MVS	46.0
6	UNKNOWN	0.016	MVS	49.0
7	UNKNOWN	0.185	MVS	49.0
8	BENZENE	3.975	PPM	66.8
9	TOLUENE	6.696	PPM	135.7
10	UNKNOWN	4.647	MVS	242.4
11	ETHYLBENZENE	7.391	PPM	282.4
12	M,P-XYLENE	14.20	PPM	303.7
13	O-XYLENE	5.964	PPM	356.3

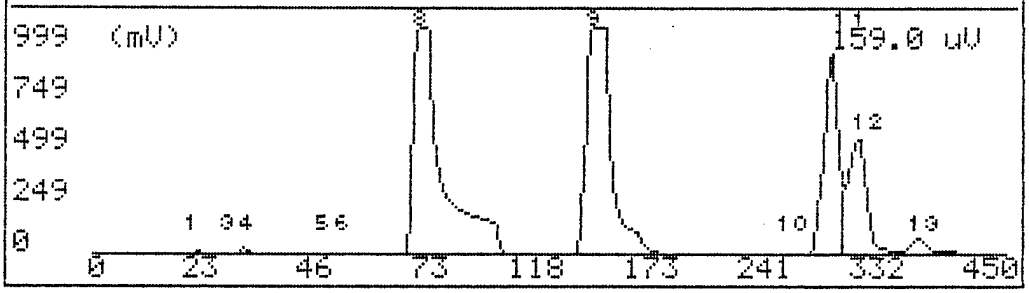
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
10 PPM BTEX

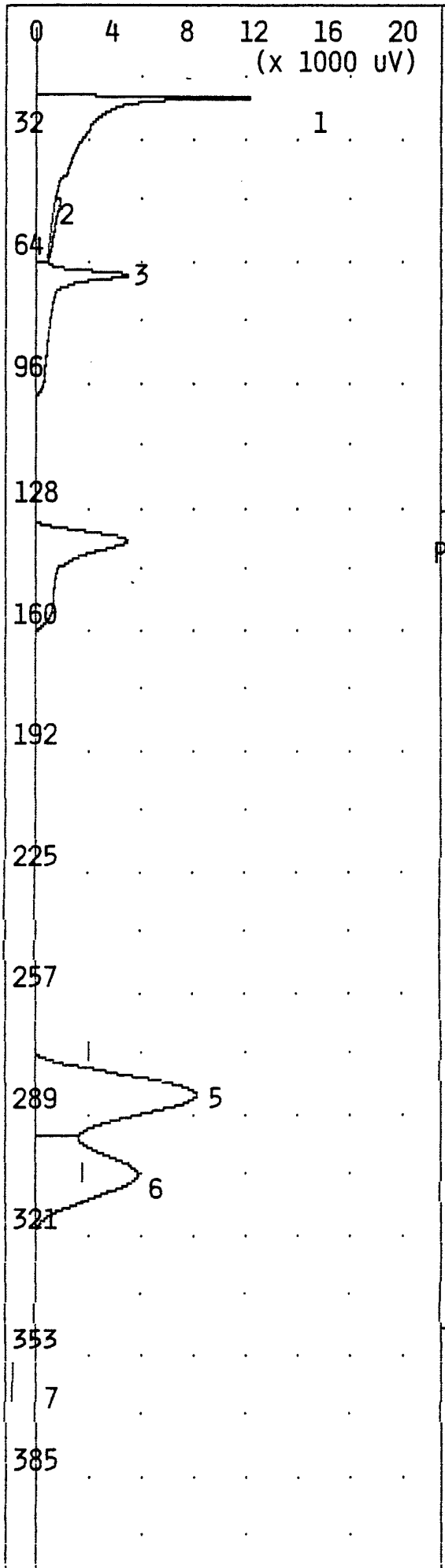
G.C. Ready 10S+ GC Function Aug 1,95 13:06
-- Analysis No 3 -- Run at - Aug 1,95 12:54 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
5	Unknown	0.223 mVS	-No-	46.0 sec
6	Unknown	0.016 mVS	-No-	49.0 sec
7	Unknown	0.185 mVS	-No-	49.0 sec
8	benzene	10.00 ppm	-No-	66.8 sec
9	toluene	10.00 ppm	-No-	135.7 sec
10	Unknown	4.647 mVS	-No-	242.4 sec
11	ethylbenzene	10.00 ppm	-No-	282.4 sec
12	m,p-xylene	20.00 ppm	-No-	303.7 sec
13	o-xylene	10.05 ppm	-No-	356.3 sec

- Detected 13 peaks. Use ↑ ↓ to scroll [455 sec]



ANALYSIS #4 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 1,95 13:16
SAMPLE TIME: AUG 1,95 13:08

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	12	ML/MIN
B/F FLOW	12	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	450.0	SEC

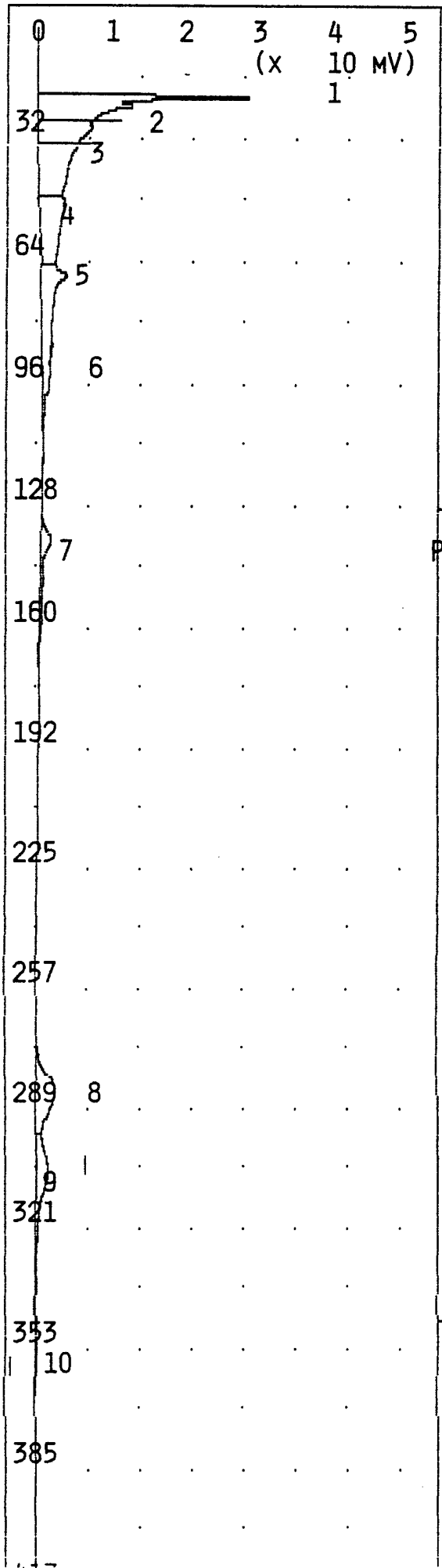
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	118.3	MVS	18.8
2	UNKNOWN	2.650	MVS	46.2
3	BENZENE	21.17	PPB	65.6
4	TOLUENE	61.33	PPB	134.6
5	ETHYLBENZENE	147.7	PPB	281.6
6	M,P-XYLENE	313.9	PPB	302.9
7	O-XYLENE	197.2	PPB	356.3

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLAANK

ANALYSIS #5 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 1,95 13:29
SAMPLE TIME: AUG 1,95 13:21

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	12	ML/MIN
B/F FLOW	12	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	450.0	SEC

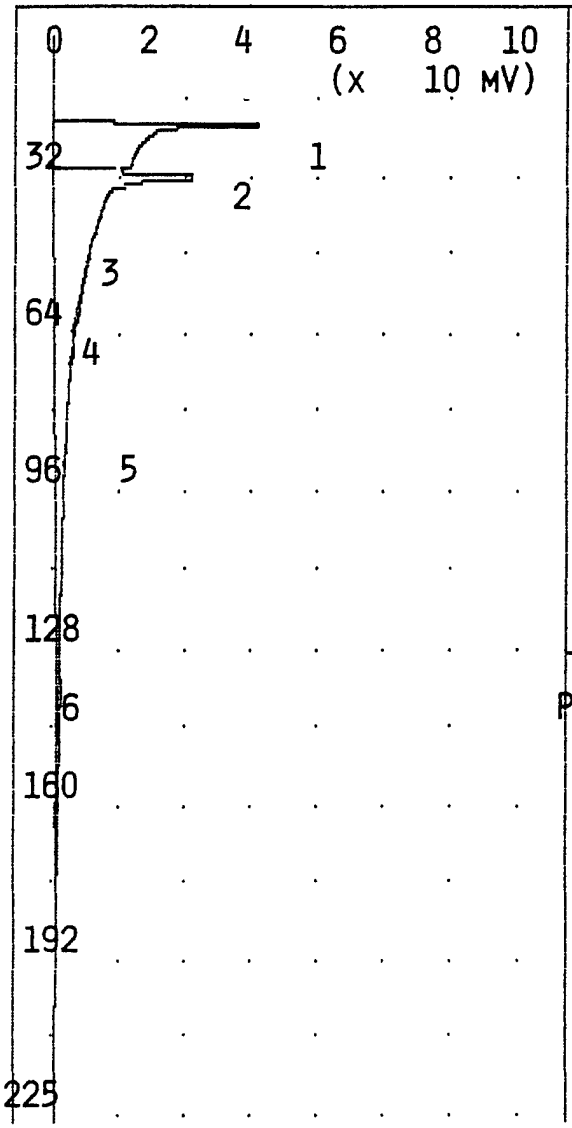
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	47.43	MVS	18.7
2	UNKNOWN	59.18	MVS	21.4
3	UNKNOWN	90.70	MVS	27.1
4	UNKNOWN	49.87	MVS	46.2
5	BENZENE	23.21	PPB	65.7
6	UNKNOWN	0.480	MVS	84.4
7	TOLUENE	12.52	PPB	134.8
8	ETHYLBENZENE	58.12	PPB	282.6
9	M,P-XYLENE	97.59	PPB	303.7
10	O-XYLENE	6.434	PPB	356.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
POTABLE WATER

ANALYSIS #6 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 1,95 14:04
SAMPLE TIME: AUG 1,95 13:56

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	12	ML/MIN
B/F FLOW	12	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	450.0	SEC

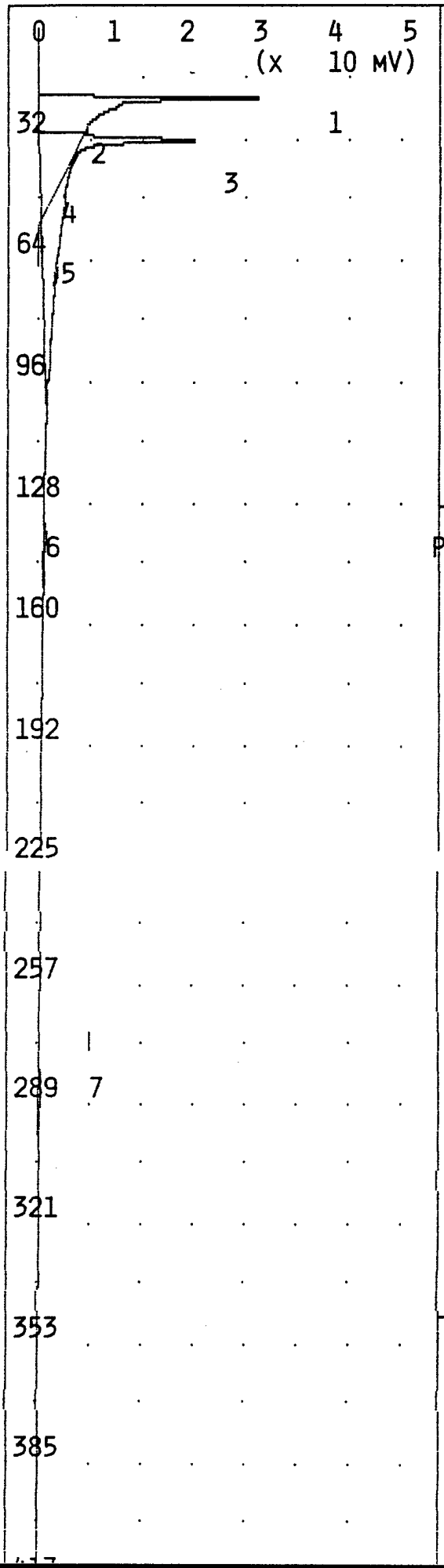
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	221.9	MVS	18.8
2	UNKNOWN	494.4	MVS	30.0
3	UNKNOWN	3.141	MVS	45.8
4	BENZENE	0.414	PPB	65.6
5	UNKNOWN	0.409	MVS	84.4
6	TOLUENE	6.188	PPB	134.6
7	ETHYLBENZENE	3.803	PPB	282.1
8	UNKNOWN	-0.00	MVS	305.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-001BH 0.5- 2.0
14G

ANALYSIS #7 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 1,95 14:30
SAMPLE TIME: AUG 1,95 14:22

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	12	ML/MIN
B/F FLOW	12	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	450.0	SEC

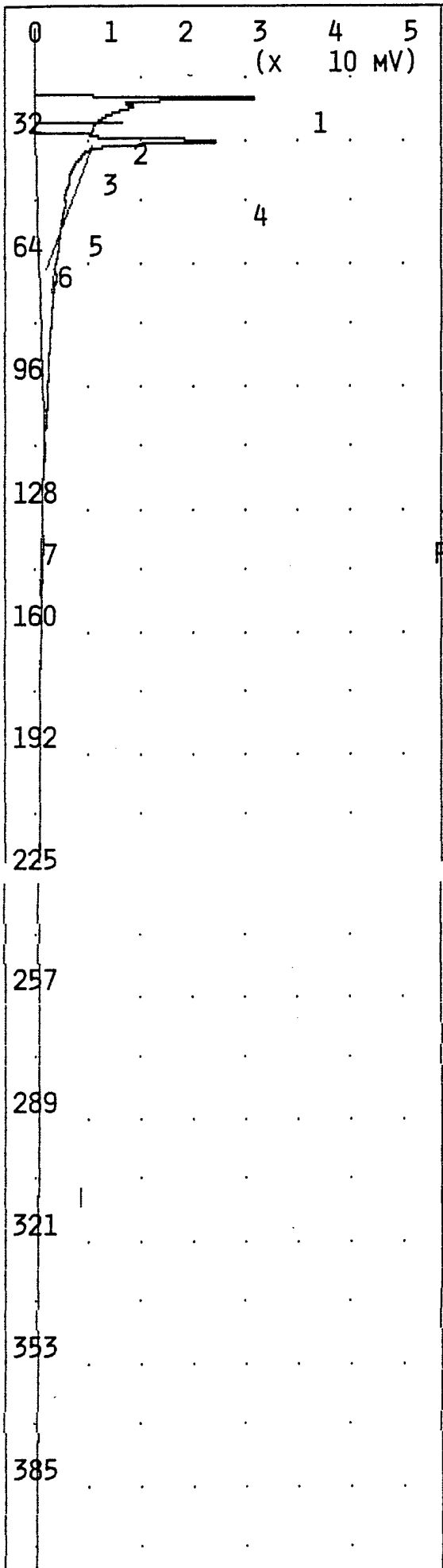
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	113.0	MVS	18.8
2	UNKNOWN	0.312	MVS	27.3
3	UNKNOWN	196.2	MVS	30.2
4	UNKNOWN	3.053	MVS	46.0
5	BENZENE	0.339	PPB	65.7
6	TOLUENE	1.956	PPB	135.2
7	ETHYLBENZENE	2.028	PPB	282.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-001BH 3.5- 5.0
20G

ANALYSIS #8 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 1,95 14:40
SAMPLE TIME: AUG 1,95 14:33

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	12	ML/MIN
B/F FLOW	12	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	450.0	SEC

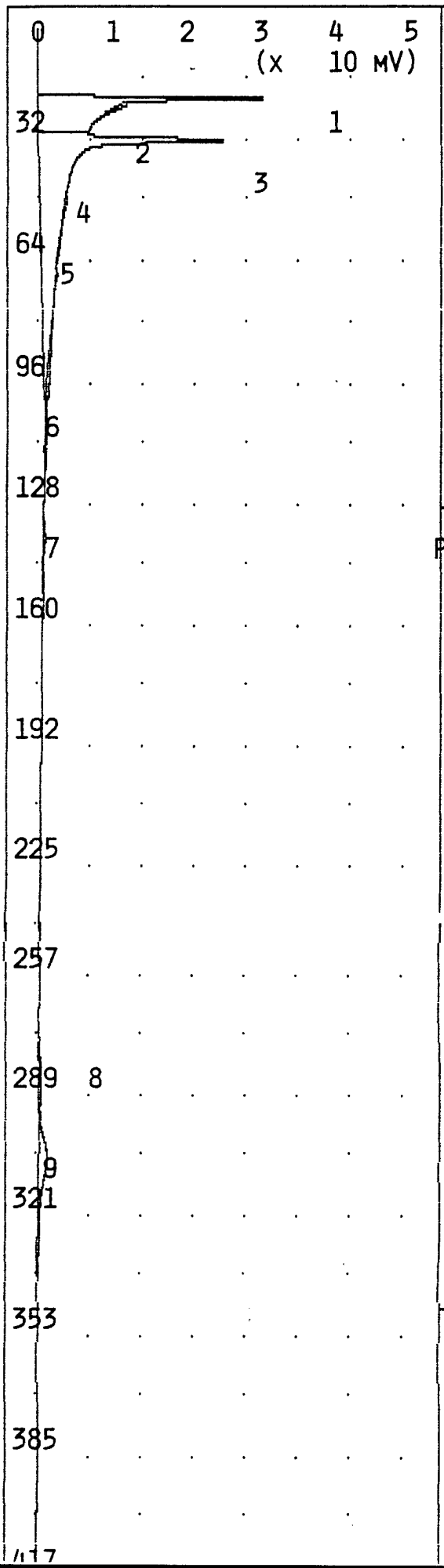
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	40.15	MVS	18.8
2	UNKNOWN	81.58	MVS	20.8
3	UNKNOWN	0.327	MVS	27.2
4	UNKNOWN	225.7	MVS	30.1
5	UNKNOWN	2.891	MVS	45.7
6	BENZENE	0.324	PPB	65.7
7	TOLUENE	1.284	PPB	135.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-001BH 8.5 ~~10.0~~ 10.0 B
~~20G~~
17g B

ANALYSIS #9 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 1,95 15:10
SAMPLE TIME: AUG 1,95 15:02

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	12	ML/MIN
B/F FLOW	12	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	450.0	SEC

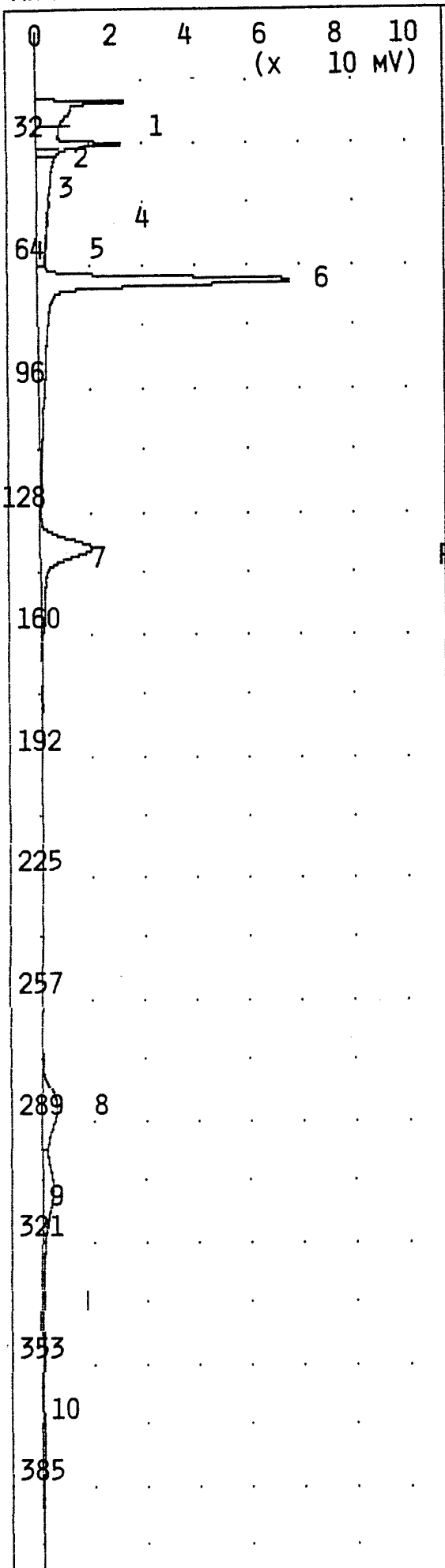
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	118.8	MVS	18.8
2	UNKNOWN	1.514	MVS	20.8
3	UNKNOWN	224.2	MVS	30.2
4	UNKNOWN	2.753	MVS	45.9
5	BENZENE	1.136	PPB	65.8
6	UNKNOWN	0.194	MVS	104.8
7	TOLUENE	1.294	PPB	135.3
8	ETHYLBENZENE	6.428	PPB	282.6
9	M,P-XYLENE	58.17	PPB	304.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-002BH 0.0- 1.5
14G

ANALYSIS #10 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 1,95 15:24
SAMPLE TIME: AUG 1,95 15:17

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	12	ML/MIN
B/F FLOW	12	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	450.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	33.83 MVS	18.8
2	UNKNOWN	51.32 MVS	20.9
3	UNKNOWN	12.65 MVS	27.3
4	UNKNOWN	148.7 MVS	30.2
5	UNKNOWN	2.178 MVS	46.1
6	BENZENE	106.6 PPB	66.2
7	TOLUENE	99.53 PPB	135.6
8	ETHYLBENZENE	85.56 PPB	283.4
9	M,P-XYLENE	170.2 PPB	305.0
10	O-XYLENE	58.94 PPB	358.3

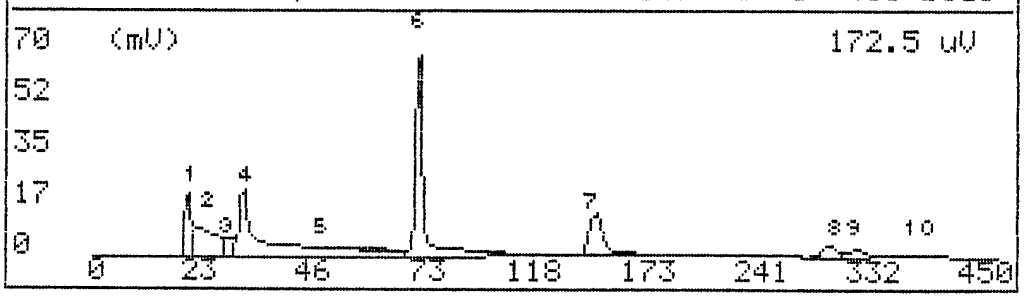
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

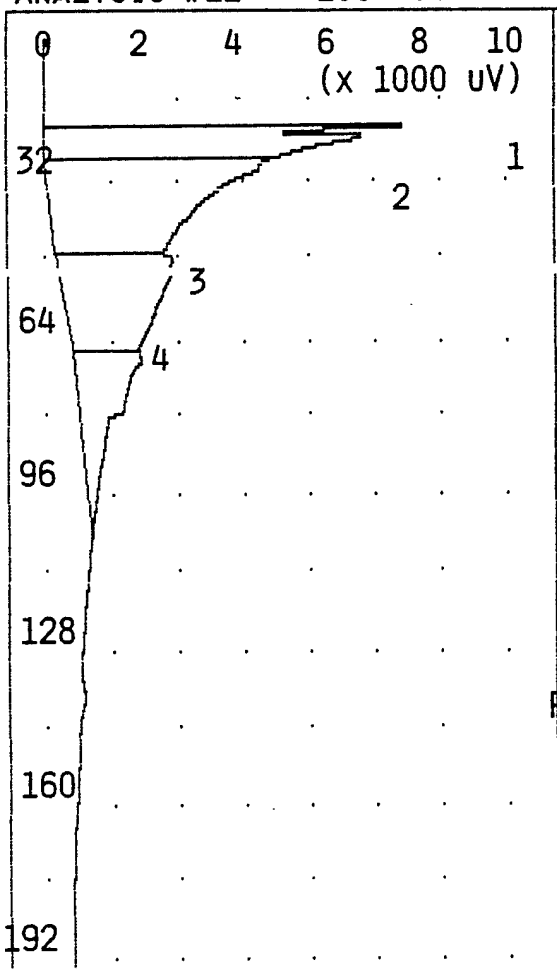
G.C. Ready 10S+ GC Function Aug 1,95 15:29
-- Analysis No 10 -- Run at - Aug 1,95 15:17 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
2	Unknown	51.32 mVS	-No-	20.9 sec
3	Unknown	12.65 mVS	-No-	27.3 sec
4	Unknown	148.7 mVS	-No-	30.2 sec
5	Unknown	2.178 mVS	-No-	46.1 sec
6	benzene	100.0 ppb	-No-	66.2 sec
7	toluene	100.0 ppb	-No-	135.6 sec
8	ethylbenzene	100.0 ppb	-No-	283.4 sec
9	m,p-xylene	200.0 ppb	-No-	305.0 sec
10	o-xylene	99.99 ppb	-No-	358.3 sec

- Detected 10 peaks. Use ↑ ↓ to scroll [455 sec]



ANALYSIS #11 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 1,95 15:38
SAMPLE TIME: AUG 1,95 15:30

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	12	ML/MIN
B/F FLOW	12	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	450.0	SEC

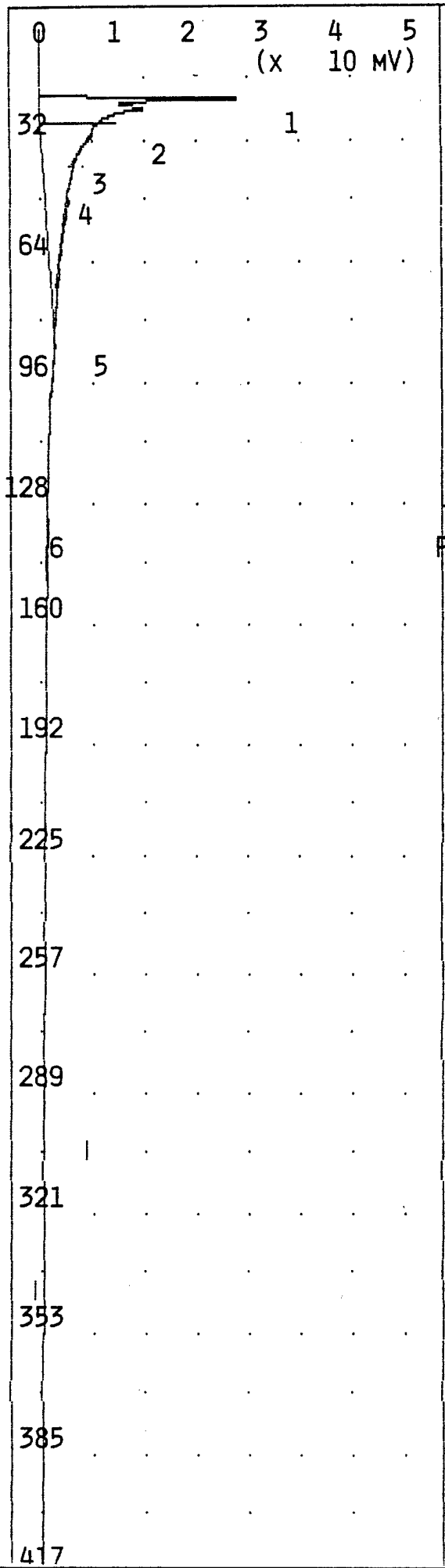
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	11.67	MVS	19.0
2	UNKNOWN	98.57	MVS	21.0
3	UNKNOWN	38.45	MVS	46.1
4	BENZENE	8.176	PPB	65.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #12 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 1,95 15:49
SAMPLE TIME: AUG 1,95 15:41

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	12	ML/MIN
B/F FLOW	12	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	450.0	SEC

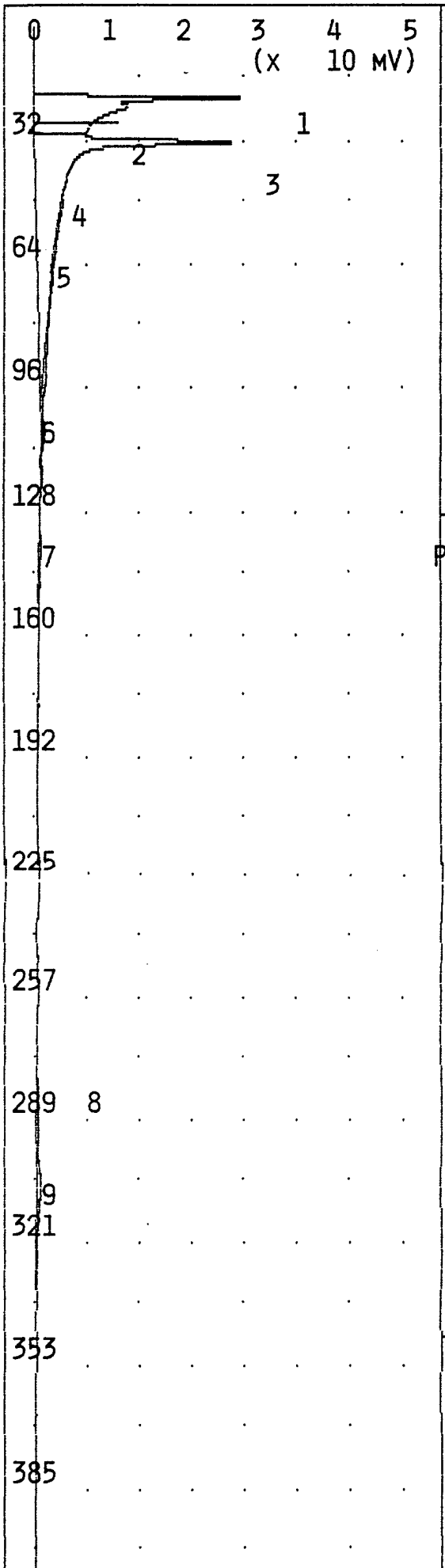
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	36.45	MVS	18.8
2	UNKNOWN	199.1	MVS	21.6
3	UNKNOWN	0.532	MVS	28.7
4	UNKNOWN	2.265	MVS	46.3
5	UNKNOWN	1.858	MVS	84.5
6	TOLUENE	0.746	PPB	133.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
POTABLE WATER

ANALYSIS #13 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 1,95 16:00
SAMPLE TIME: AUG 1,95 15:53

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	12	ML/MIN
B/F FLOW	12	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	450.0	SEC

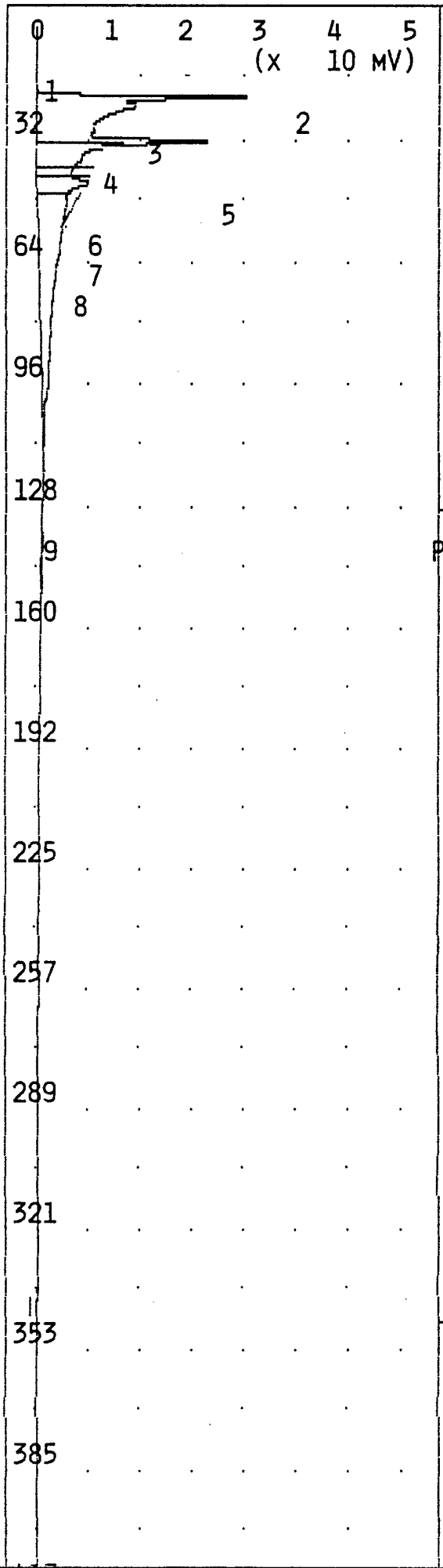
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	39.19	MVS	18.8
2	UNKNOWN	80.12	MVS	20.9
3	UNKNOWN	227.7	MVS	30.2
4	UNKNOWN	3.265	MVS	46.0
5	BENZENE	1.272	PPB	65.8
6	UNKNOWN	1.745	MVS	106.0
7	TOLUENE	1.329	PPB	134.9
8	ETHYLBENZENE	3.485	PPB	283.2
9	M,P-XYLENE	28.34	PPB	304.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-002BH
3.5- 5.0
20G

ANALYSIS #14 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 1,95 16:11		
SAMPLE TIME: AUG 1,95 16:03		
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	12	ML/MIN
B/F FLOW	12	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	450.0	SEC

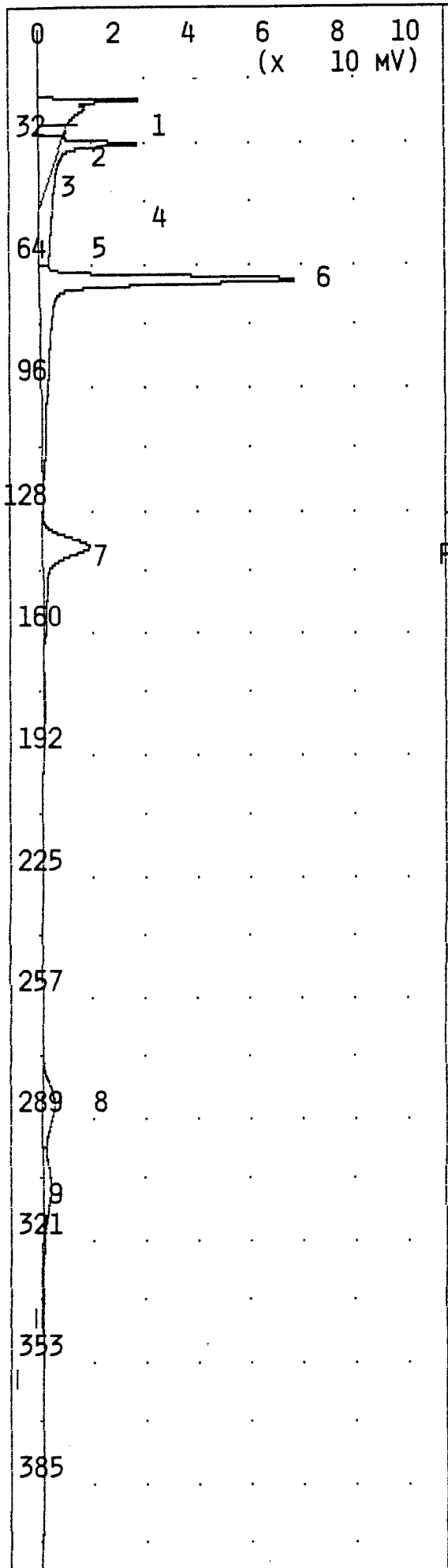
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.388	MVS	17.3
2	UNKNOWN	40.51	MVS	18.9
3	UNKNOWN	67.50	MVS	21.4
4	UNKNOWN	16.62	MVS	27.4
5	UNKNOWN	87.88	MVS	30.2
6	UNKNOWN	0.607	MVS	34.6
7	UNKNOWN	144.2	MVS	41.3
8	UNKNOWN	0.276	MVS	46.0
9	TOLUENE	0.660	PPB	135.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-002BH
8.5-10.0
23G

ANALYSIS #15 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 1,95 16:21
SAMPLE TIME: AUG 1,95 16:13

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	12	ML/MIN
B/F FLOW	12	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	450.0	SEC

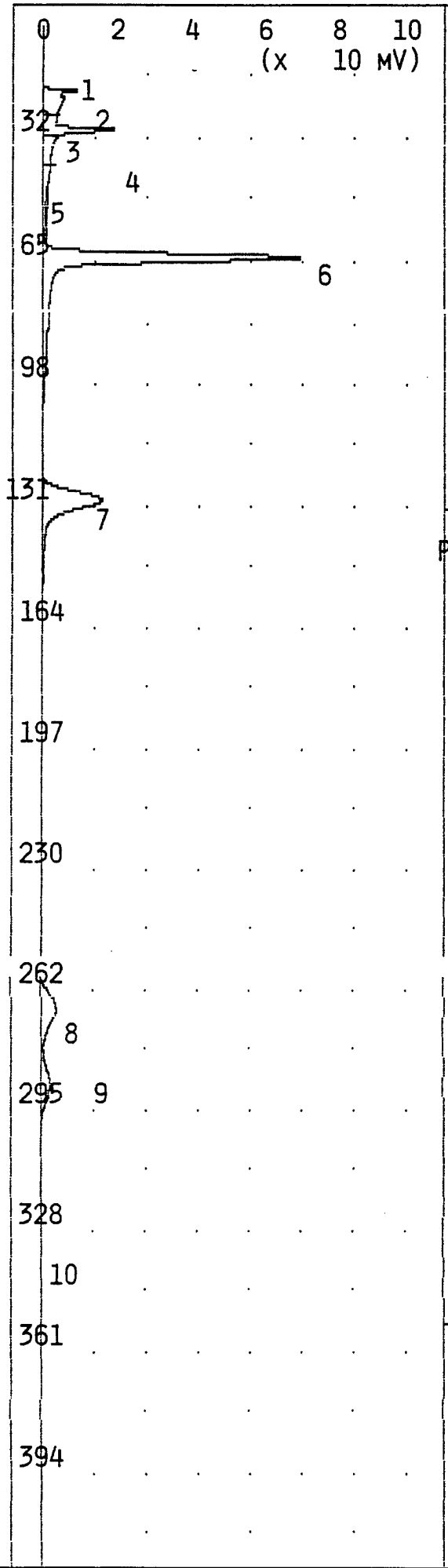
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	34.79	MVS	18.8
2	UNKNOWN	80.09	MVS	20.8
3	UNKNOWN	0.330	MVS	27.4
4	UNKNOWN	175.3	MVS	30.2
5	UNKNOWN	1.923	MV$	46.0
6	BENZENE	104.4	PPB	66.2
7	TOLUENE	96.14	PPB	135.7
8	ETHYLBENZENE	81.29	PPB	283.2
9	M,P-XYLENE	144.6	PPB	305.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

ANALYSIS #1 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 09:57
SAMPLE TIME: AUG 2,95 09:50

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	28	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	13.43 MVS	17.8
2	UNKNOWN	33.00 MVS	20.2
3	UNKNOWN	9.201 MVS	25.9
4	UNKNOWN	104.5 MVS	28.4
5	UNKNOWN	2.176 MVS	45.0
6	UNKNOWN	280.7 MVS	62.4
7	UNKNOWN	140.0 MVS	127.6
8	UNKNOWN	64.75 MVS	266.1
9	UNKNOWN	62.85 MVS	286.4
10	UNKNOWN	28.06 MVS	337.6

NOTES

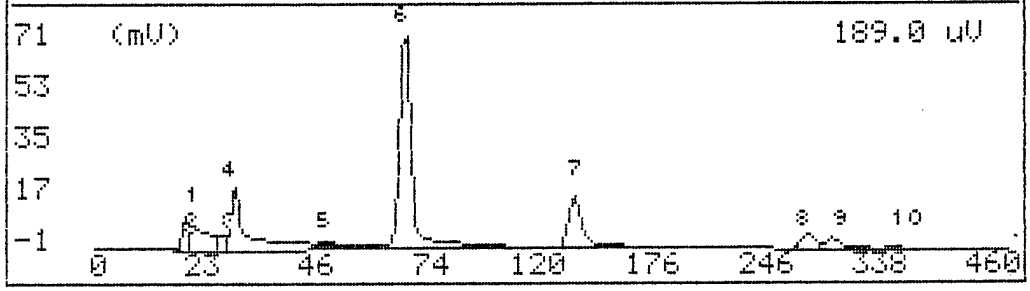
JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

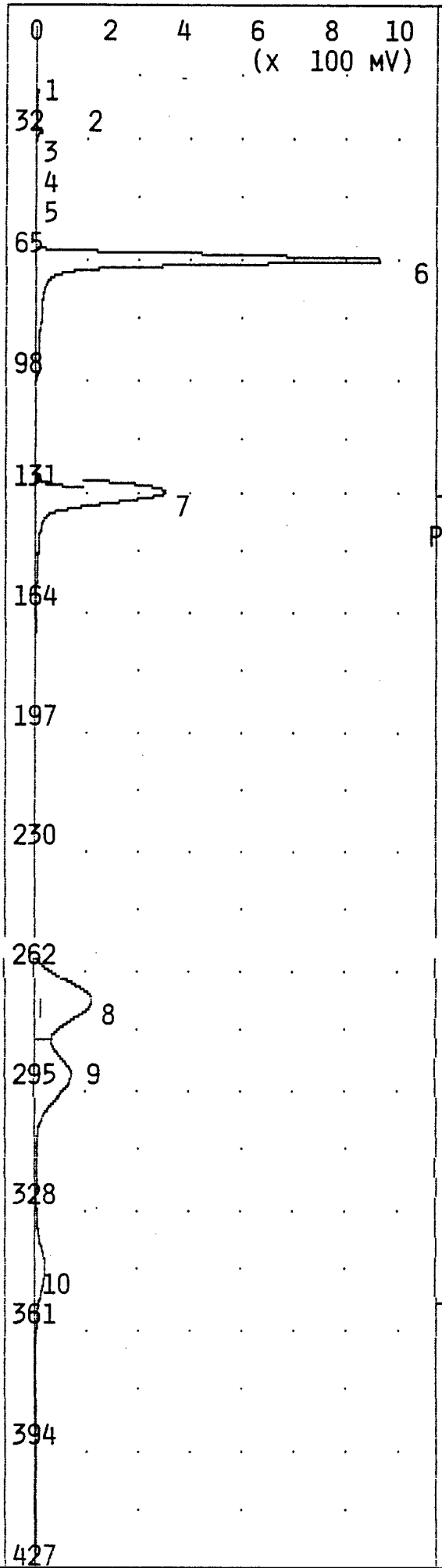
G.C. Ready 10S+ GC Function Aug 2,95 10:04
-- Analysis No 1 -- Run at - Aug 2,95 09:50 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
2	Unknown	33.00 mVS	-No-	20.2 sec
3	Unknown	9.201 mVS	-No-	25.9 sec
4	Unknown	104.5 mVS	-No-	28.4 sec
5	Unknown	2.176 mVS	-No-	45.0 sec
6	benzene	100.0 ppb	-No-	62.4 sec
7	toluene	100.0 ppb	-No-	127.6 sec
8	ethylbenzene	100.1 ppb	-No-	266.1 sec
9	m,p-xylene	202.1 ppb	-No-	286.4 sec
10	o-xylene	113.3 ppb	-No-	337.6 sec

- Detected 10 peaks. Use ↑ ↓ to scroll [465 secl



ANALYSIS #2 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 10:15
SAMPLE TIME: AUG 2,95 10:07

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	30	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	12.54	MVS	18.0
2	UNKNOWN	29.84	MVS	20.3
3	UNKNOWN	8.034	MVS	26.0
4	UNKNOWN	89.93	MVS	28.7
5	UNKNOWN	1.656	MVS	47.4
6	BENZENE	1.327	PPM	63.6
7	TOLUENE	1.973	PPM	129.0
8	ETHYLBENZENE	3.251	PPM	268.5
9	M,P-XYLENE	5.200	PPM	289.3
10	O-XYLENE	2.377	PPM	342.0

NOTES

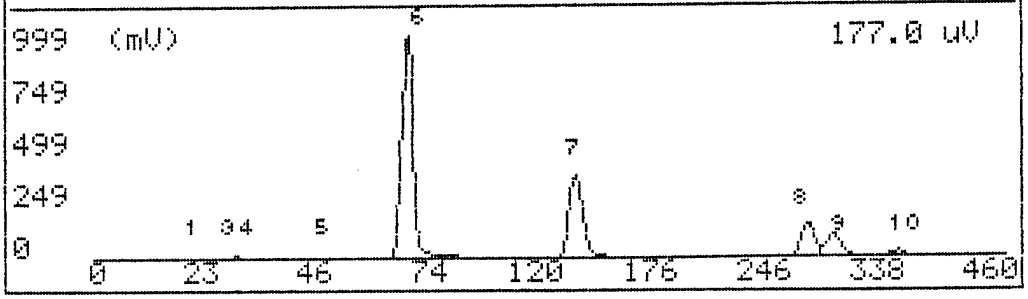
JOE BYRD, JR.
MINNEAPOLIS ANGB
1 PPM BTEX

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

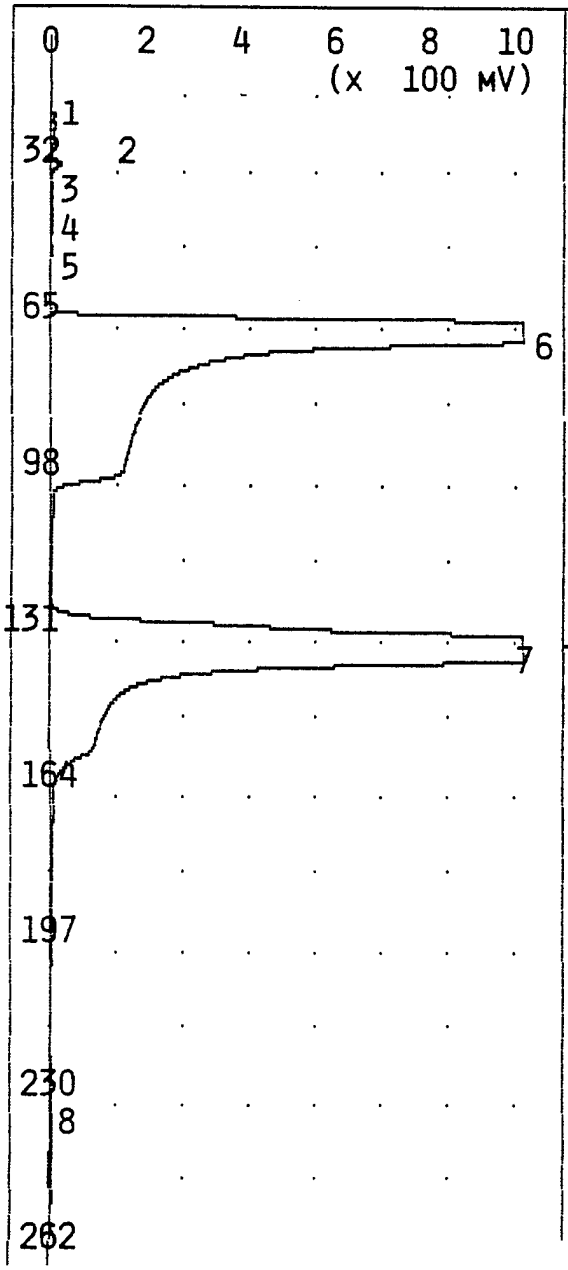
G.C. Ready 10S+ GC Function Aug 2,95 10:20
-- Analysis No 2 -- Run at - Aug 2,95 10:07 -

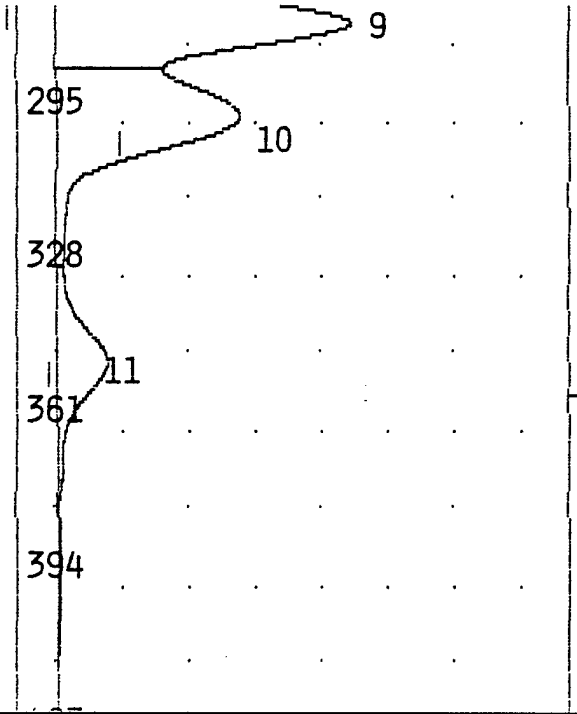
Pk No	Name	Conc/Area	Alarm	Ret.Time
2	Unknown	29.84 mVS	-No-	20.3 sec
3	Unknown	8.034 mVS	-No-	26.0 sec
4	Unknown	89.93 mVS	-No-	28.7 sec
5	Unknown	1.656 mVS	-No-	47.4 sec
6	benzene	1.000 ppm	-No-	63.6 sec
7	toluene	1.000 ppm	-No-	129.0 sec
8	ethylbenzene	1.000 ppm	-No-	268.5 sec
9	m,p-xylene	2.000 ppm	-No-	289.3 sec
10	o-xylene	1.005 ppm	-No-	342.0 sec

- Detected 10 peaks. Use ↑ ↓ to scroll [465 sec]



ANALYSIS #3 10S+ GC FUNCTION ANALYSIS REPORT





TIME PRINTED:	AUG 2,95 10:30
SAMPLE TIME:	AUG 2,95 10:22

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	31	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	14.96	MVS	18.0
2	UNKNOWN	69.88	MVS	20.0
3	UNKNOWN	0.267	MVS	26.2
4	UNKNOWN	135.3	MVS	28.8
5	UNKNOWN	1.830	MV$	47.5
6	BENZENE	4.602	PPM	63.7
7	TOLUENE	5.181	PPM	130.6
8	UNKNOWN	2.027	MVS	232.6
9	ETHYLBENZENE	4.011	PPM	271.7
10	M,P-XYLENE	7.827	PPM	292.0
11	O-XYLENE	3.305	PPM	344.6

NOTES

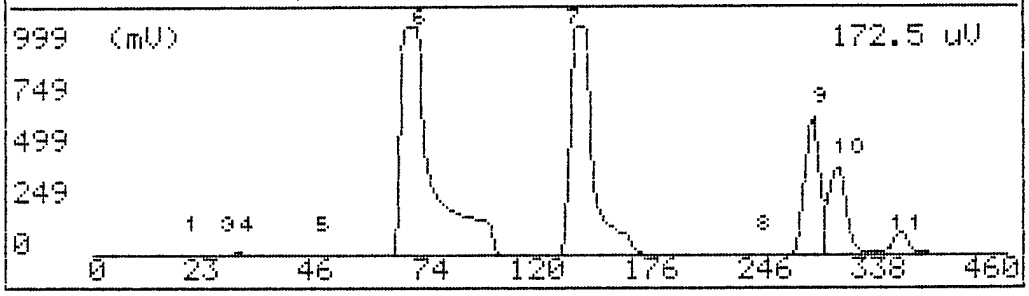
JOE BYRD, JR.
MINNEAPOLIS ANGB
10 PPM BTEX

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

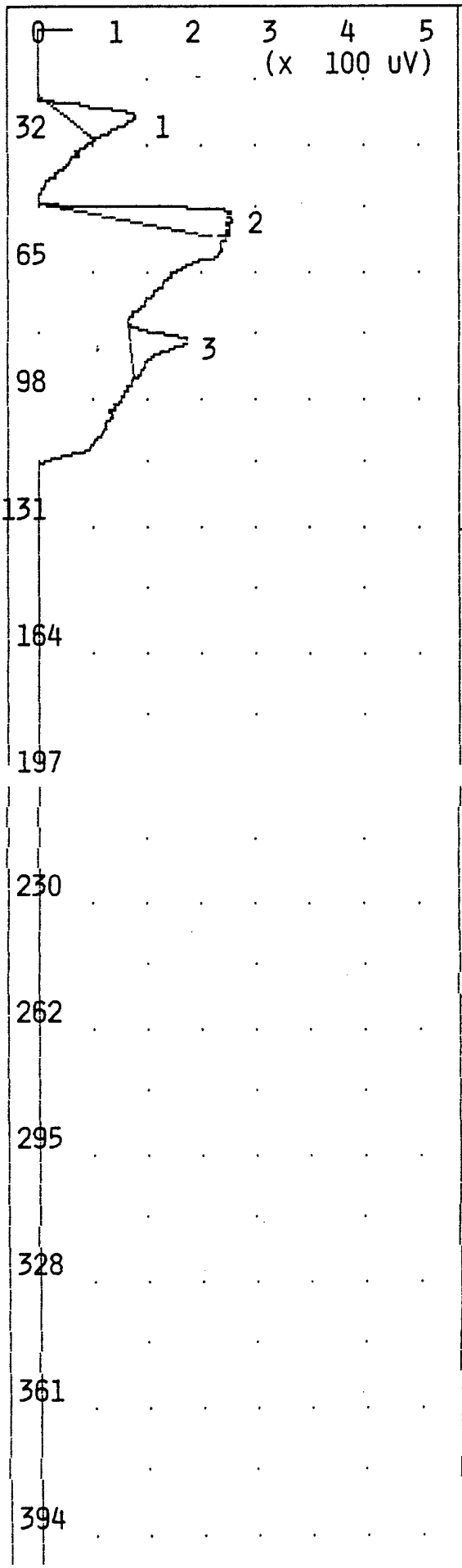
G.C. Ready 10S+ GC Function Aug 2,95 10:36
-- Analysis No 3 -- Run at - Aug 2,95 10:22 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	0.267 mVS	-No-	26.2 sec
4	Unknown	135.3 mVS	-No-	28.8 sec
5	Unknown	1.830 mVS	-No-	47.5 sec
6	benzene	10.00 ppm	-No-	63.7 sec
7	toluene	10.00 ppm	-No-	130.6 sec
8	Unknown	2.027 mVS	-No-	232.6 sec
9	ethylbenzene	10.00 ppm	-No-	271.7 sec
10	m,p-xylene	20.00 ppm	-No-	292.0 sec
11	o-xylene	10.04 ppm	-No-	344.6 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [465 sec]



ANALYSIS #5 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 11:13
SAMPLE TIME: AUG 2,95 11:05

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	32	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

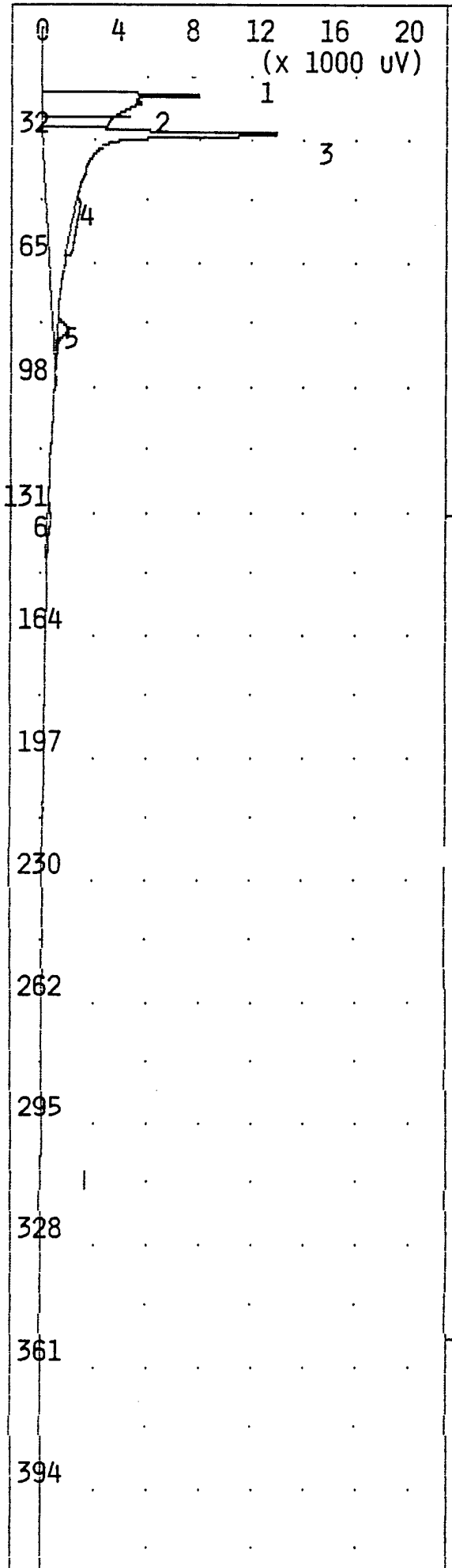
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	1.198 MVS	22.8
2	UNKNOWN	1.008 MVS	48.3
3	UNKNOWN	0.472 MVS	81.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #6 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 11:27
SAMPLE TIME: AUG 2,95 11:19

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	32	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

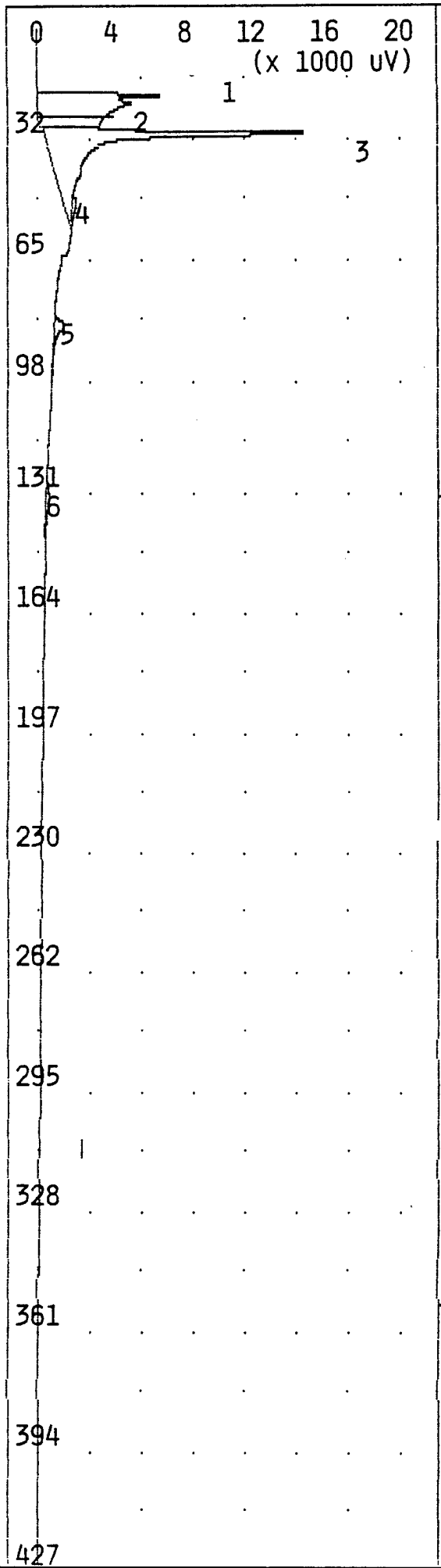
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	14.04	MVS	18.3
2	UNKNOWN	36.67	MVS	20.7
3	UNKNOWN	106.0	MVS	29.2
4	UNKNOWN	3.986	MVS	47.3
5	UNKNOWN	2.201	MVS	81.2
6	TOLUENE	0.617	PPB	130.5

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-003BH 0.0- 2.0 14G

DET FLOW AND B/F FLOW VALUES ARE
12.5 BUT SHOW 125

ANALYSIS #7 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 11:37
SAMPLE TIME: AUG 2,95 11:29

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

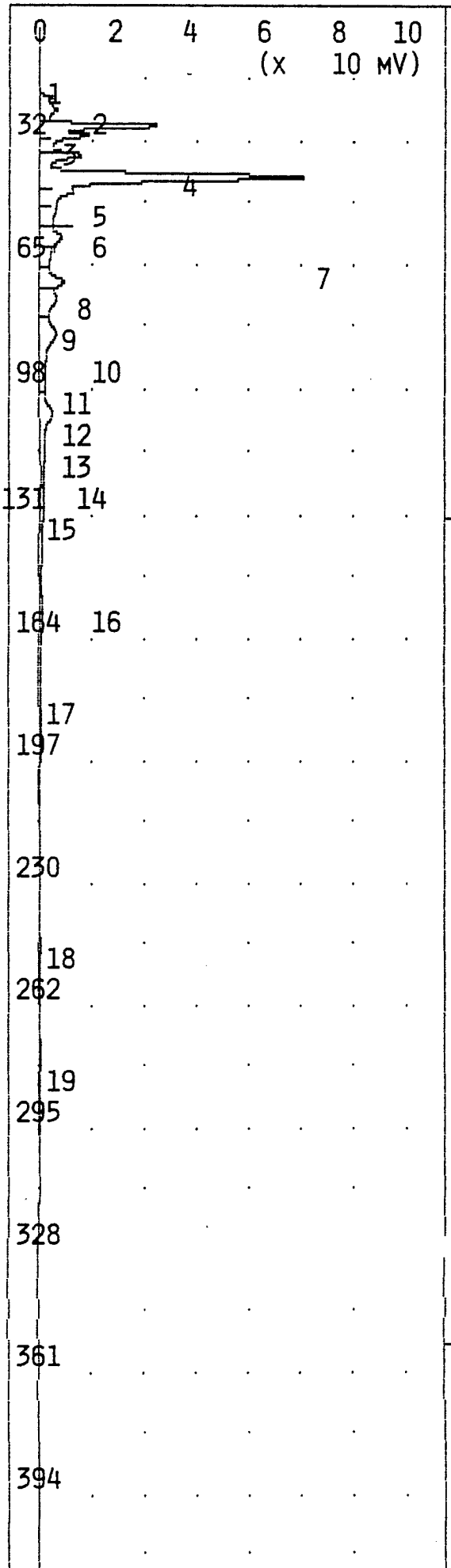
PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	11.14 MVS	18.2
2	UNKNOWN	31.71 MVS	20.8
3	UNKNOWN	57.47 MVS	29.2
4	UNKNOWN	0.706 MVS	47.1
5	UNKNOWN	2.161 MVS	81.2
6	TOLUENE	0.705 PPB	130.9

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-003BH 3.5- 5.0 14G

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

ANALYSIS #8 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 11:48
SAMPLE TIME: AUG 2,95 11:40

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

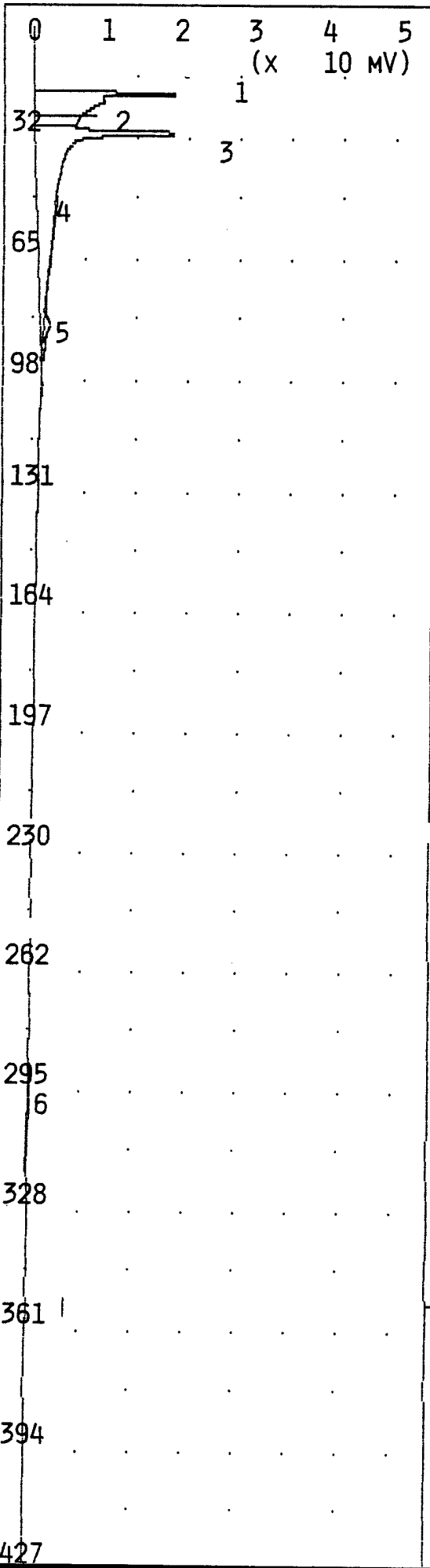
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.311	MVS	17.0
2	UNKNOWN	5.821	MVS	18.4
3	UNKNOWN	18.34	MVS	22.1
4	UNKNOWN	56.91	MVS	26.5
5	UNKNOWN	32.54	MVS	29.2
6	UNKNOWN	32.55	MVS	34.2
7	UNKNOWN	177.2	MVS	39.9
8	UNKNOWN	57.29	MVS	43.7
9	UNKNOWN	0.377	MVS	47.8
10	UNKNOWN	43.38	MVS	56.3
11	BENZENE	9.920	PPB	68.0
12	UNKNOWN	26.66	MVS	72.5
13	UNKNOWN	48.14	MVS	81.6
14	UNKNOWN	43.49	MVS	102.5
15	TOLUENE	14.31	PPB	126.1
16	UNKNOWN	15.11	MVS	154.8
17	UNKNOWN	6.338	MVS	177.8
18	UNKNOWN	3.159	MVS	243.7
19	ETHYLBENZENE	5.178	PPB	274.1

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-003BH 8.5-10.0 17G

DET FLOW AND B/F FLOW VALUES ARE
12.5 BUT SHOW 125

ANALYSIS #9 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95	11:58	
SAMPLE TIME: AUG 2,95	11:50	
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

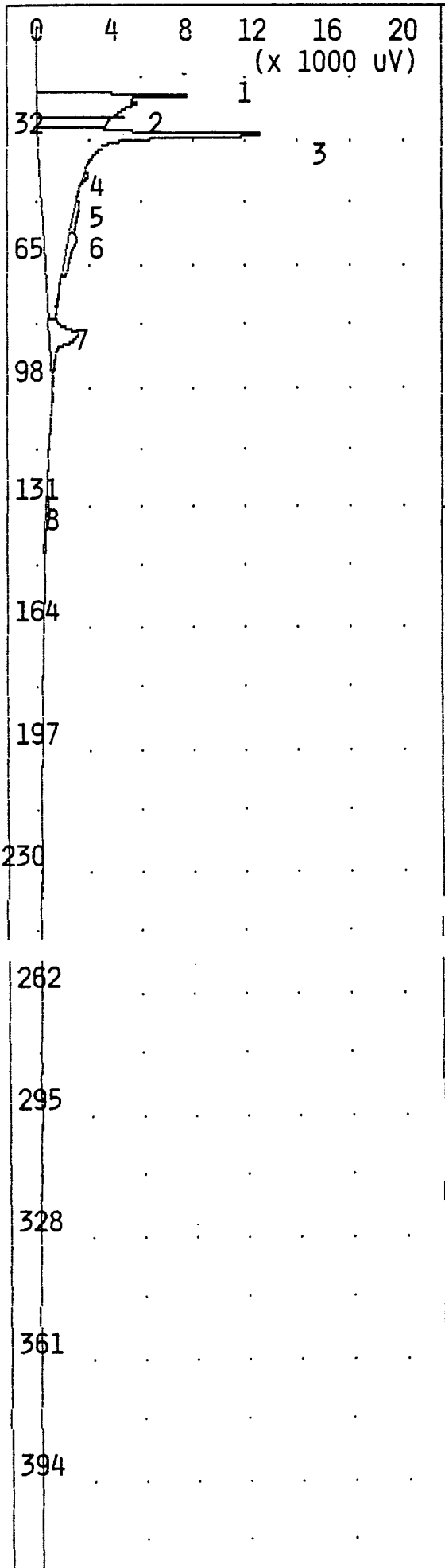
PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	28.81 MVS	18.4
2	UNKNOWN	61.16 MVS	20.3
3	UNKNOWN	174.5 MVS	29.3
4	UNKNOWN	2.076 MVS	47.2
5	UNKNOWN	4.599 MV$	81.3
6	M,P-XYLENE	5.678 PPB	294.1

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-004BH 0.0- 1.5 17G

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

ANALYSIS #10 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 12:08
SAMPLE TIME: AUG 2,95 12:00

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

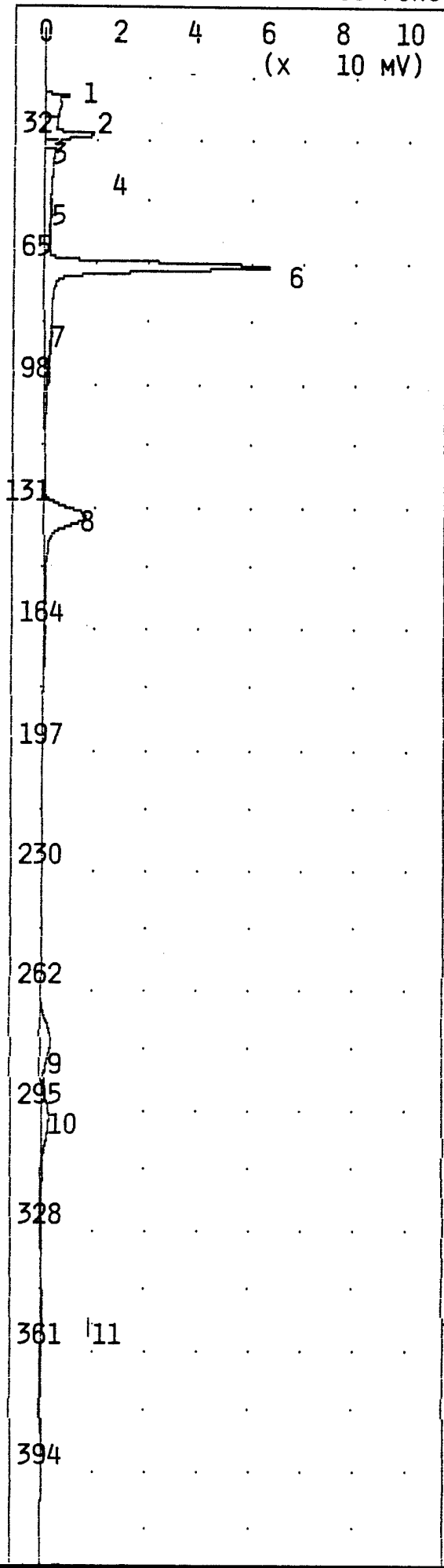
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	13.30	MVS	18.3
2	UNKNOWN	37.18	MVS	20.7
3	UNKNOWN	107.6	MVS	29.2
4	UNKNOWN	0.342	MVS	39.6
5	UNKNOWN	2.287	MVS	47.1
6	UNKNOWN	3.245	MVS	56.3
7	UNKNOWN	10.72	MVS	82.0
8	TOLUENE	0.784	PPB	130.9

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-004BH 3.5- 5.0 17G

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

ANALYSIS #11 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 12:18		
SAMPLE TIME: AUG 2,95 12:11		
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	9.772	MVS	18.4
2	UNKNOWN	25.86	MVS	20.7
3	UNKNOWN	7.328	MVS	26.6
4	UNKNOWN	96.61	MVS	29.3
5	UNKNOWN	1.419	MVS	47.2
6	BENZENE	85.67	PPB	64.5
7	UNKNOWN	6.101	MVS	81.2
8	TOLUENE	61.25	PPB	131.4
9	ETHYLBENZENE	58.92	PPB	274.1
10	M,P-XYLENE	108.4	PPB	295.2
11	O-XYLENE	28.33	PPB	348.6

NOTES

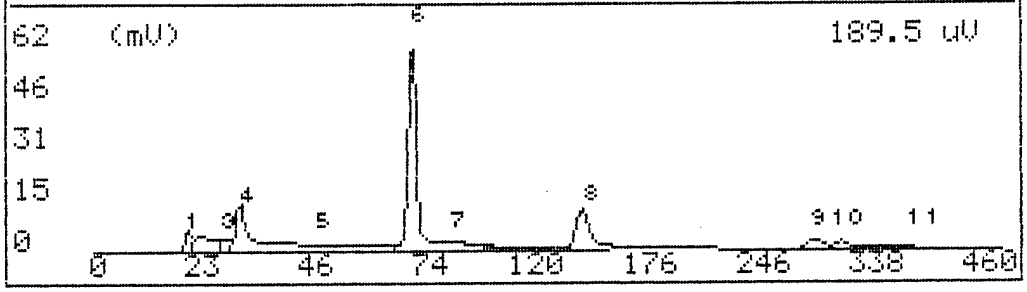
JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

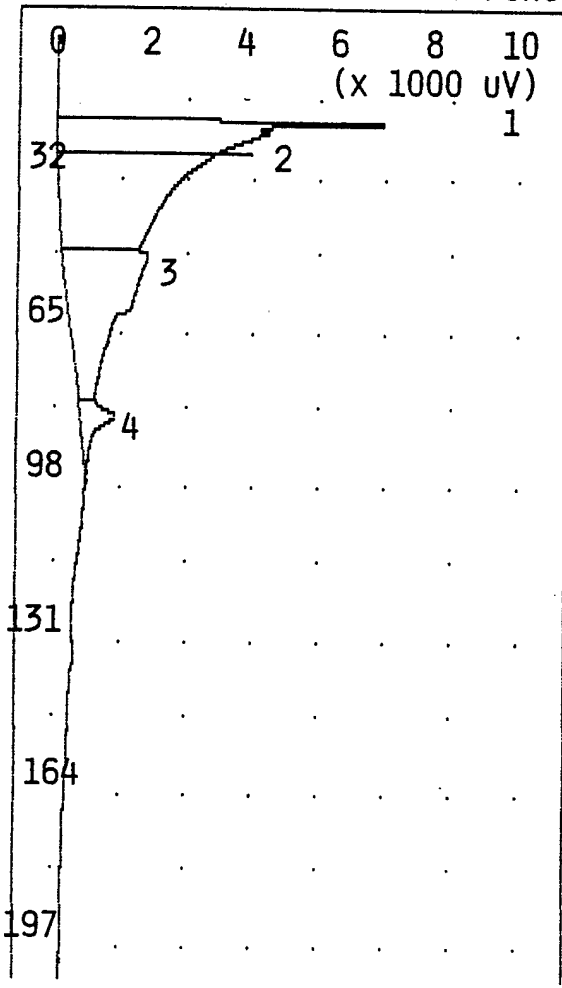
G.C. Ready 10S+ GC Function Aug 2,95 12:23
-- Analysis No 11 -- Run at - Aug 2,95 12:11 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	7.328 mVS	-No-	26.6 sec
4	Unknown	96.61 mVS	-No-	29.3 sec
5	Unknown	1.419 mVS	-No-	47.2 sec
6	benzene	100.0 ppb	-No-	64.5 sec
7	Unknown	6.101 mVS	-No-	81.2 sec
8	toluene	100.0 ppb	-No-	131.4 sec
9	ethylbenzene	100.0 ppb	-No-	274.1 sec
10	m,p-xylene	200.0 ppb	-No-	295.2 sec
11	o-xylene	99.99 ppb	-No-	348.6 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [465 sec]



ANALYSIS #12 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED:	AUG 2,95	12:31
SAMPLE TIME:	AUG 2,95	12:24
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

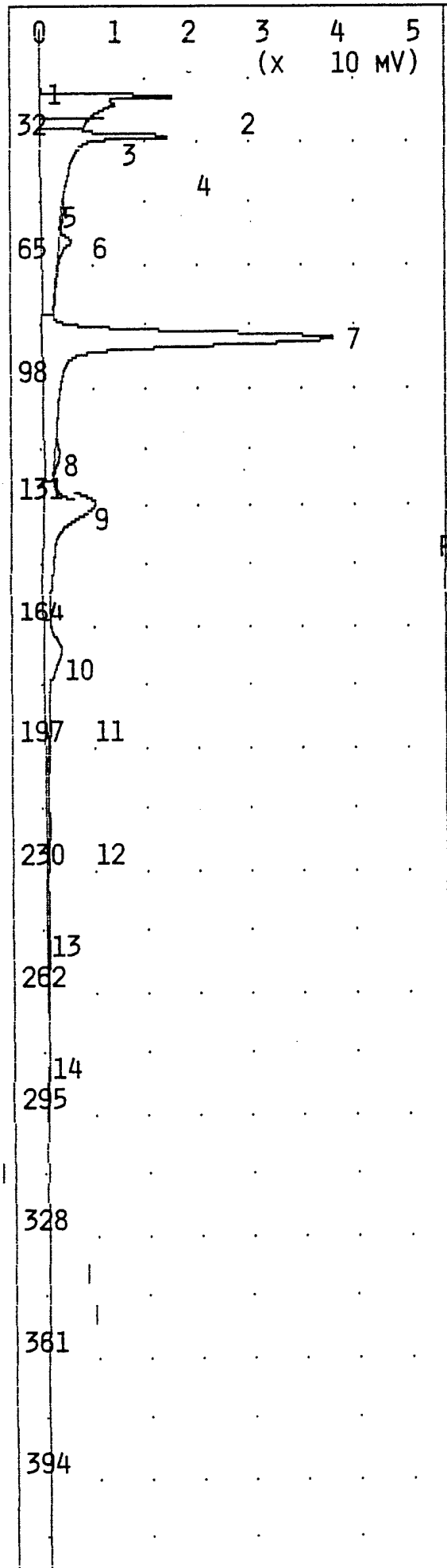
PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	12.07 MVS	18.4
2	UNKNOWN	76.06 MVS	20.4
3	UNKNOWN	34.10 MVS	46.9
4	UNKNOWN	4.876 MVS	81.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

ANALYSIS #13 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 12:41
SAMPLE TIME: AUG 2,95 12:34

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

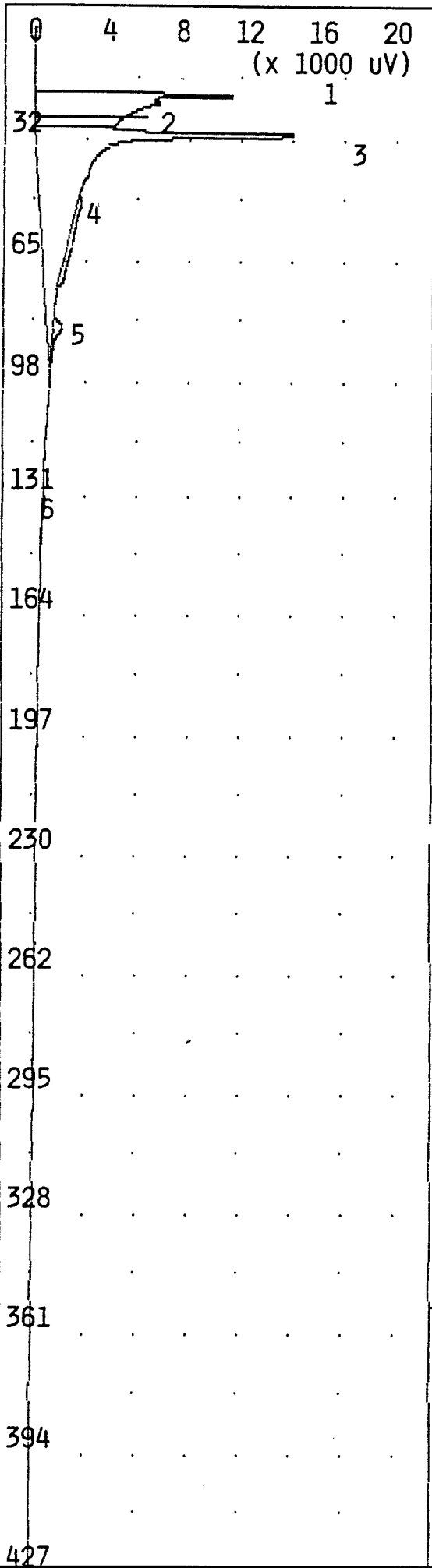
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.428	MVS	17.2
2	UNKNOWN	27.83	MVS	18.3
3	UNKNOWN	63.25	MVS	20.7
4	UNKNOWN	173.7	MVS	29.3
5	UNKNOWN	1.443	MVS	47.0
6	UNKNOWN	6.096	MVS	57.1
7	UNKNOWN	254.6	MVS	83.2
8	UNKNOWN	3.355	MVS	113.4
9	TOLUENE	103.5	PPB	128.8
10	UNKNOWN	64.31	MVS	168.6
11	UNKNOWN	0.407	MVS	189.6
12	UNKNOWN	0.832	MVS	216.6
13	UNKNOWN	1.837	MVS	246.9
14	ETHYLBENZENE	1.298	PPB	277.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-004BH 8.5-10.0 17G

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

ANALYSIS #14 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 12:52		
SAMPLE TIME: AUG 2,95 12:44		
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

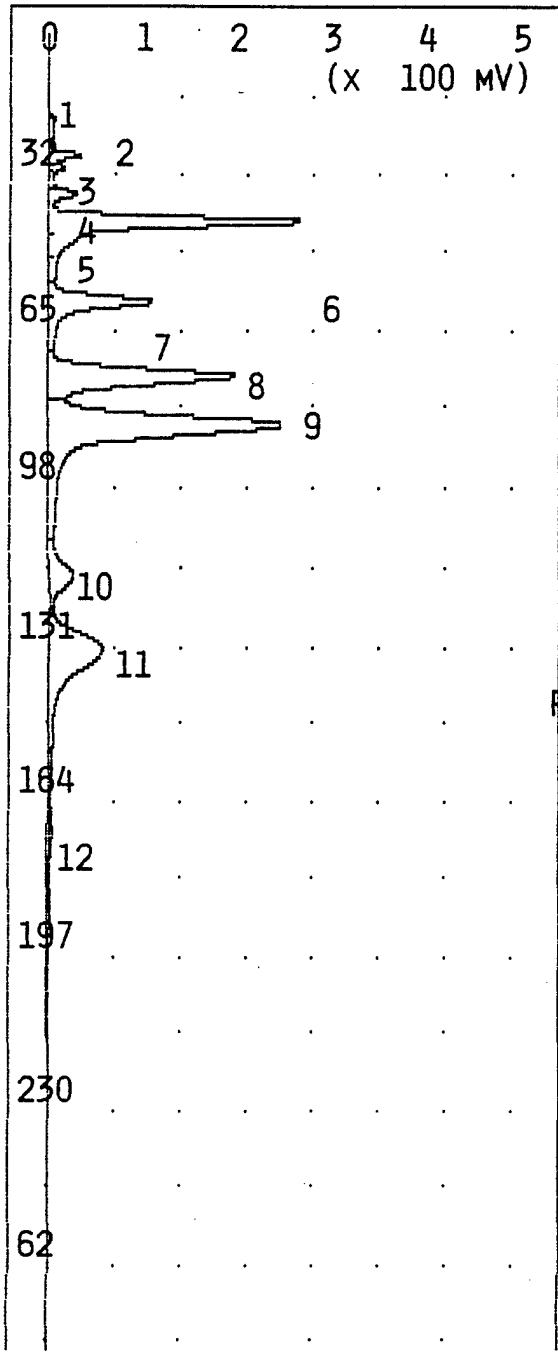
PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	18.01 MVS	18.3
2	UNKNOWN	45.34 MVS	20.7
3	UNKNOWN	130.8 MVS	29.3
4	UNKNOWN	5.248 MVS	47.0
5	UNKNOWN	1.895 MVS	81.4
6	TOLUENE	0.855 PPB	131.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-005BH 0.0- 1.5 17G

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

ANALYSIS #15 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 13:02
SAMPLE TIME: AUG 2,95 12:54

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

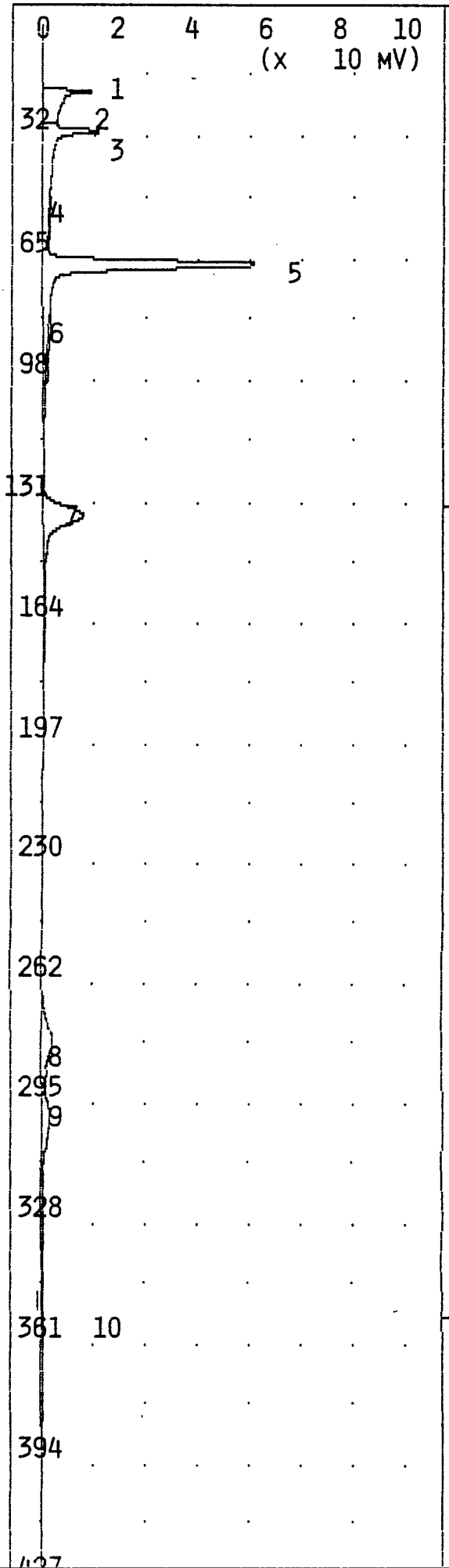
PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	11.91 MVS	18.4
2	UNKNOWN	28.17 MVS	20.8
3	UNKNOWN	63.32 MVS	26.7
4	UNKNOWN	42.31 MVS	29.4
5	UNKNOWN	76.07 MVS	34.6
6	UNKNOWN	884.3 MVS	40.2
7	UNKNOWN	419.8 MVS	57.3
8	UNKNOWN	824.9 MVS	73.0
9	UNKNOWN	1.462 VSEC	83.3
10	UNKNOWN	198.5 MVS	113.8
11	TOLUENE	313.1 PPB	129.7
12	UNKNOWN	22.96 MVS	168.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-005BH 3.5- 5.5 14G

DET FLOW AND B/F FLOW VALUES ARE
12.5 BUT SHOW 125

ANALYSIS #16 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95	14:53	
SAMPLE TIME: AUG 2,95	14:45	
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

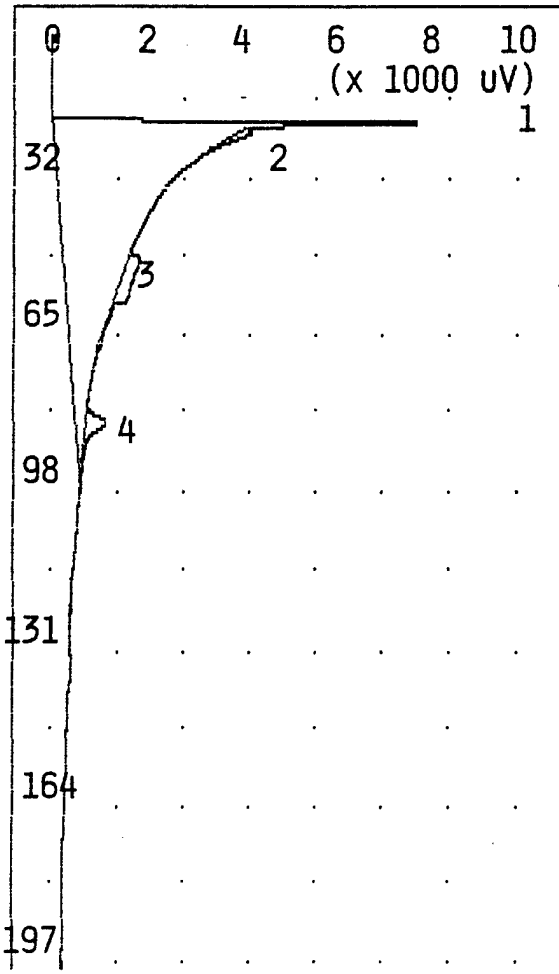
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	61.37	MVS	18.4
2	UNKNOWN	0.138	MVS	26.5
3	UNKNOWN	107.3	MVS	29.4
4	UNKNOWN	1.702	MVS	46.9
5	BENZENE	95.16	PPB	64.9
6	UNKNOWN	5.752	MVS	81.7
7	TOLUENE	95.52	PPB	132.5
8	ETHYLBENZENE	96.47	PPB	276.2
9	M,P-XYLENE	191.6	PPB	297.3
10	O-XYLENE	93.18	PPB	352.3

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

ANALYSIS #17 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 15:03
SAMPLE TIME: AUG 2,95 14:55

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

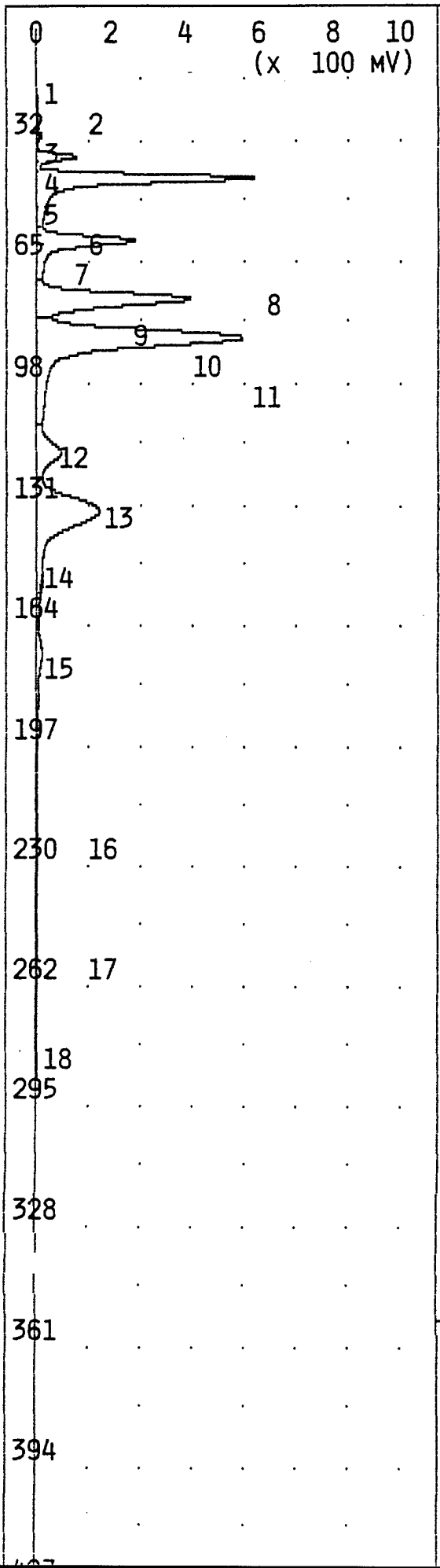
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	121.3	MVS	18.5
2	UNKNOWN	0.571	MVS	20.6
3	UNKNOWN	2.718	MVS	47.5
4	UNKNOWN	1.516	MVS	82.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

DET FLOW AND B/F FLOW VALUES ARE
12.5 BUT SHOW 125

ANALYSIS #18 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 15:13
SAMPLE TIME: AUG 2,95 15:05

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

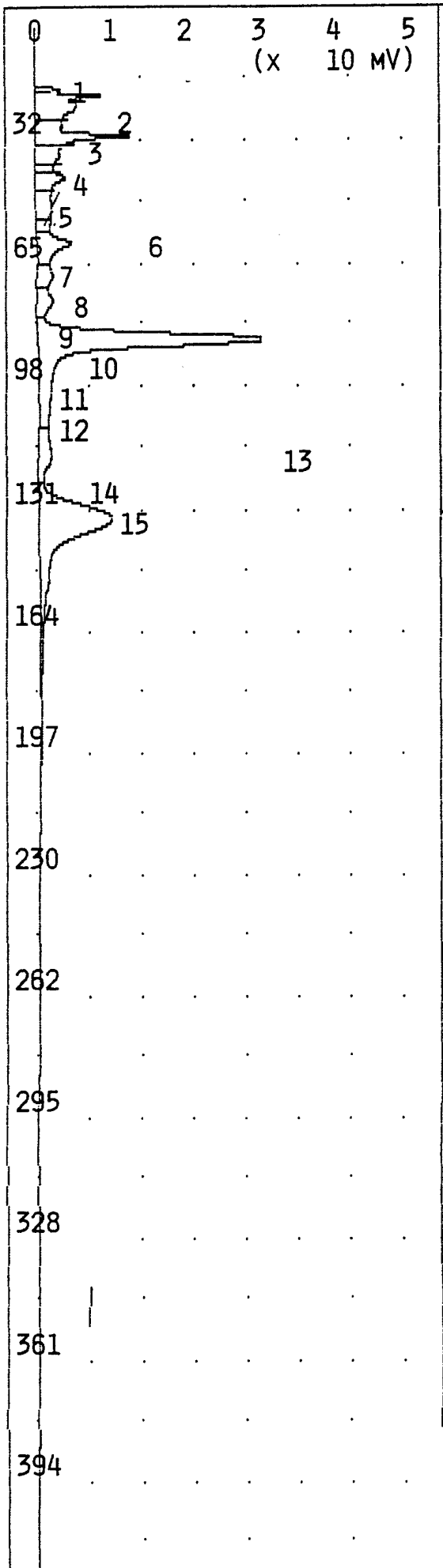
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.849	MVS	17.0
2	UNKNOWN	8.901	MVS	18.6
3	UNKNOWN	9.213	MVS	21.1
4	UNKNOWN	17.54	MVS	22.4
5	UNKNOWN	14.45	MVS	26.9
6	UNKNOWN	30.97	MVS	29.6
7	UNKNOWN	257.6	MVS	34.9
8	UNKNOWN	2.036	VSEC	40.7
9	UNKNOWN	1.081	VSEC	57.8
10	UNKNOWN	1.853	VSEC	73.7
11	UNKNOWN	3.636	VSEC	84.1
12	UNKNOWN	537.2	MVS	115.0
13	TOLUENE	740.0	PPB	130.6
14	UNKNOWN	11.88	MVS	149.8
15	UNKNOWN	712.1	MVS	170.2
16	UNKNOWN	7.201	MVS	218.8
17	UNKNOWN	9.565	MVS	249.8
18	ETHYLBENZENE	7.146	PPB	279.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-005BH 8.5-10.0 17G

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

ANALYSIS #19 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95	15:29	
SAMPLE TIME: AUG 2,95	15:21	
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

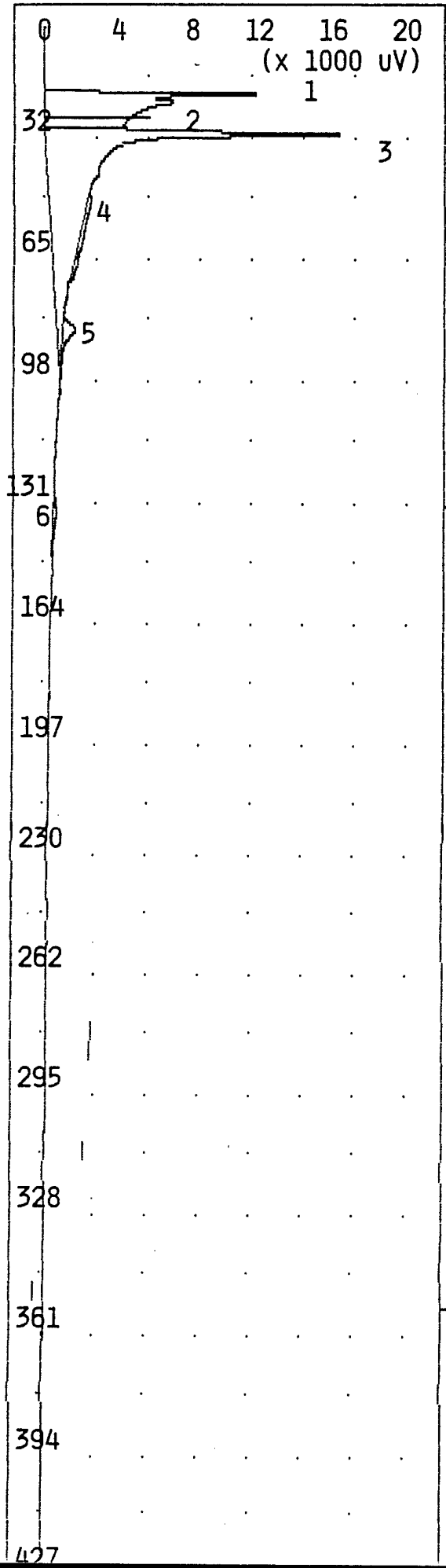
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	4.440	MVS	17.0
2	UNKNOWN	13.42	MVS	18.6
3	UNKNOWN	9.683	MVS	21.2
4	UNKNOWN	19.33	MVS	22.4
5	UNKNOWN	7.852	MVS	27.0
6	UNKNOWN	47.23	MVS	29.6
7	UNKNOWN	0.603	MVS	34.4
8	UNKNOWN	21.02	MVS	40.4
9	UNKNOWN	17.50	MVS	47.0
10	UNKNOWN	25.44	MVS	57.8
11	BENZENE	4.892	PPB	66.5
12	UNKNOWN	12.58	MVS	73.4
13	UNKNOWN	173.2	MVS	84.1
14	UNKNOWN	19.11	MVS	114.4
15	TOLUENE	113.5	PPB	131.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-005BH 13.5-~~1.0~~ 15.0 20G GB

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

ANALYSIS #20 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 15:40
SAMPLE TIME: AUG 2,95 15:32

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

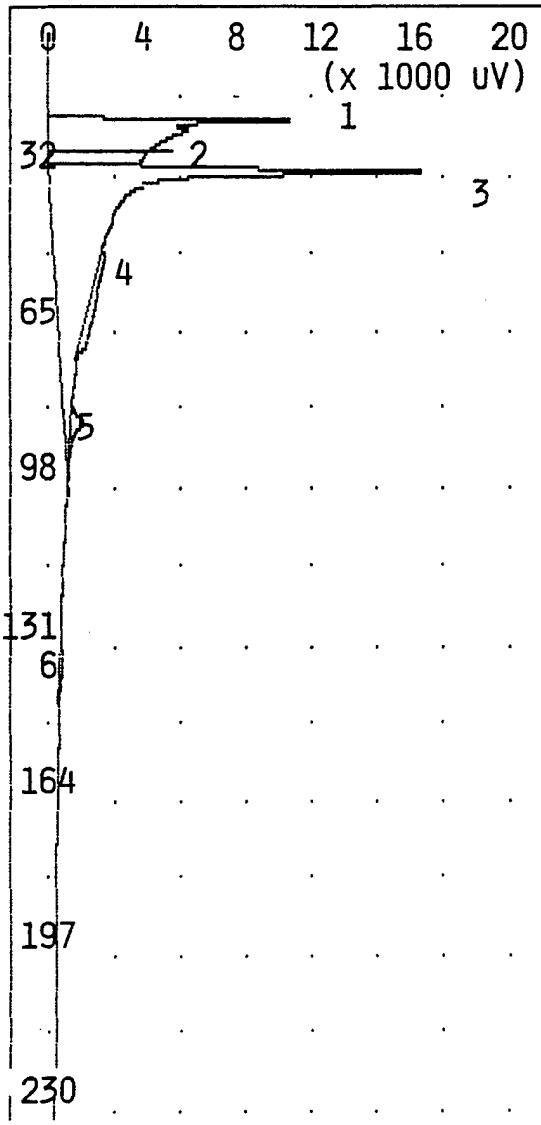
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	16.43	MVS	18.6
2	UNKNOWN	44.76	MVS	21.1
3	UNKNOWN	128.4	MVS	29.6
4	UNKNOWN	3.615	MVS	47.0
5	UNKNOWN	2.874	MVS	82.5
6	TOLUENE	1.652	PPB	131.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-006BH 0.0- 1.5 17G

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

ANALYSIS #21 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED:	AUG 2,95	16:05
SAMPLE TIME:	AUG 2,95	15:58

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

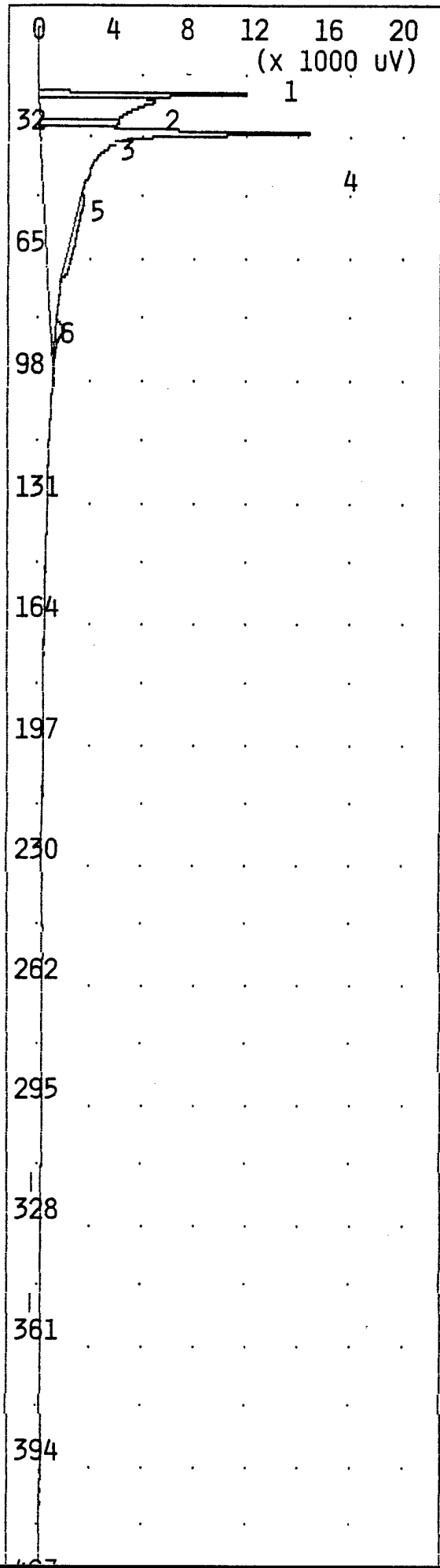
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	15.45	MVS	18.6
2	UNKNOWN	40.96	MVS	20.8
3	UNKNOWN	122.4	MVS	29.6
4	UNKNOWN	5.034	MVS	47.7
5	UNKNOWN	2.044	MVS	82.5
6	TOLUENE	0.852	PPB	132.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-006BH 3.5- 5.0 20G

DET FLOW AND B/F FLOW VALUES ARE
12.5, BUT SHOW 125.

ANALYSIS #22 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG	2,95	16:15
SAMPLE TIME: AUG	2,95	16:08
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

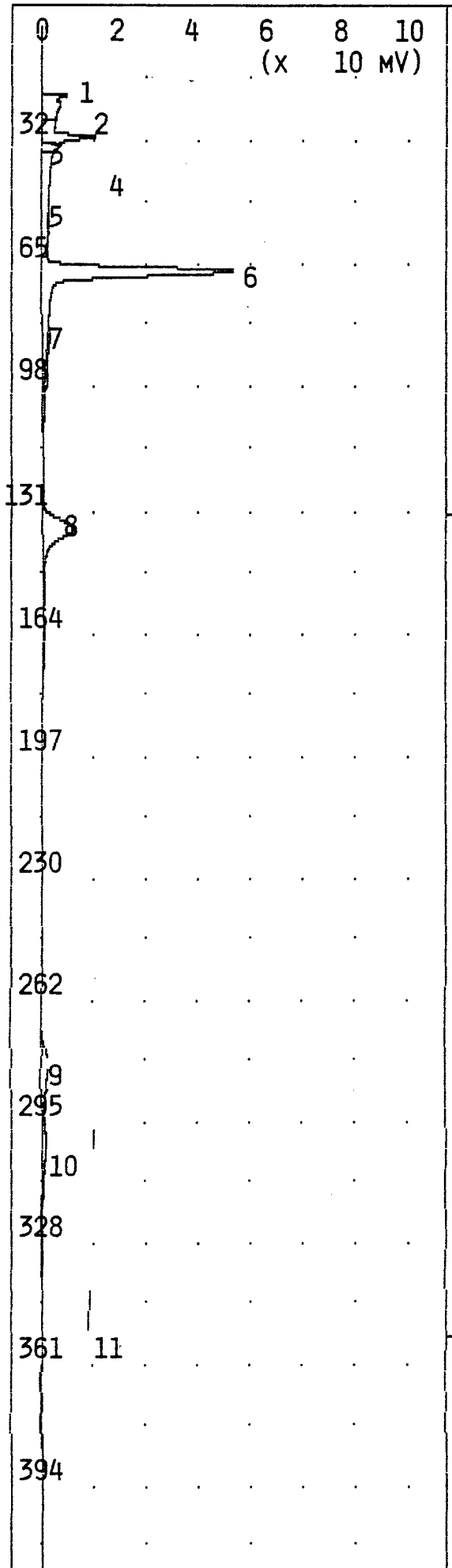
PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	16.07 MVS	18.6
2	UNKNOWN	33.24 MVS	21.1
3	UNKNOWN	8.545 MVS	27.0
4	UNKNOWN	116.1 MVS	29.8
5	UNKNOWN	5.178 MVS	47.0
6	UNKNOWN	1.712 MVS	82.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-006BH 8.5-10.0 14G

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

ANALYSIS #23 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 16:26		
SAMPLE TIME: AUG 2,95 16:18		
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	10.25	MVS	18.6
2	UNKNOWN	29.02	MVS	21.0
3	UNKNOWN	8.211	MVS	26.8
4	UNKNOWN	102.0	MVS	29.8
5	UNKNOWN	1.604	MVS	47.2
6	BENZENE	86.72	PPB	65.4
7	UNKNOWN	5.985	MVS	82.5
8	TOLUENE	75.01	PPB	133.6
9	ETHYLBENZENE	63.39	PPB	278.4
10	M,P-XYLENE	109.9	PPB	299.4
11	O-XYLENE	53.80	PPB	354.3

NOTES

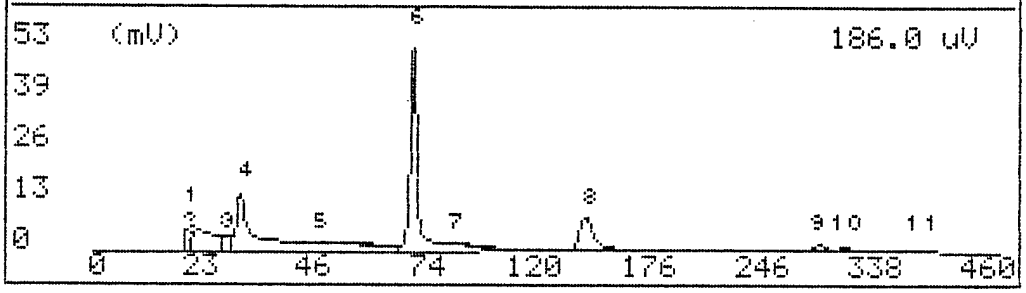
JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

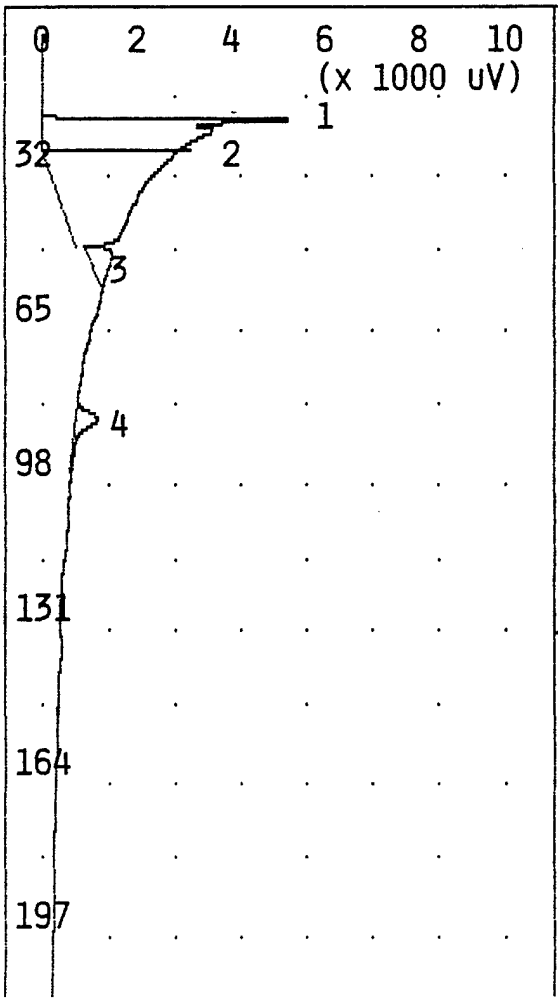
G.C. Ready 10S+ GC Function Aug 2,95 16:31
-- Analysis No 23 -- Run at - Aug 2,95 16:18 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	8.211 mVS	-No-	26.8 sec
4	Unknown	102.0 mVS	-No-	29.8 sec
5	Unknown	1.604 mVS	-No-	47.2 sec
6	benzene	100.0 ppb	-No-	65.4 sec
7	Unknown	5.985 mVS	-No-	82.5 sec
8	toluene	100.0 ppb	-No-	133.6 sec
9	ethylbenzene	100.0 ppb	-No-	278.4 sec
10	m,p-xylene	199.9 ppb	-No-	299.4 sec
11	o-xylene	99.99 ppb	-No-	354.3 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [465 sec]



ANALYSIS #24 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 16:39
SAMPLE TIME: AUG 2,95 16:32

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

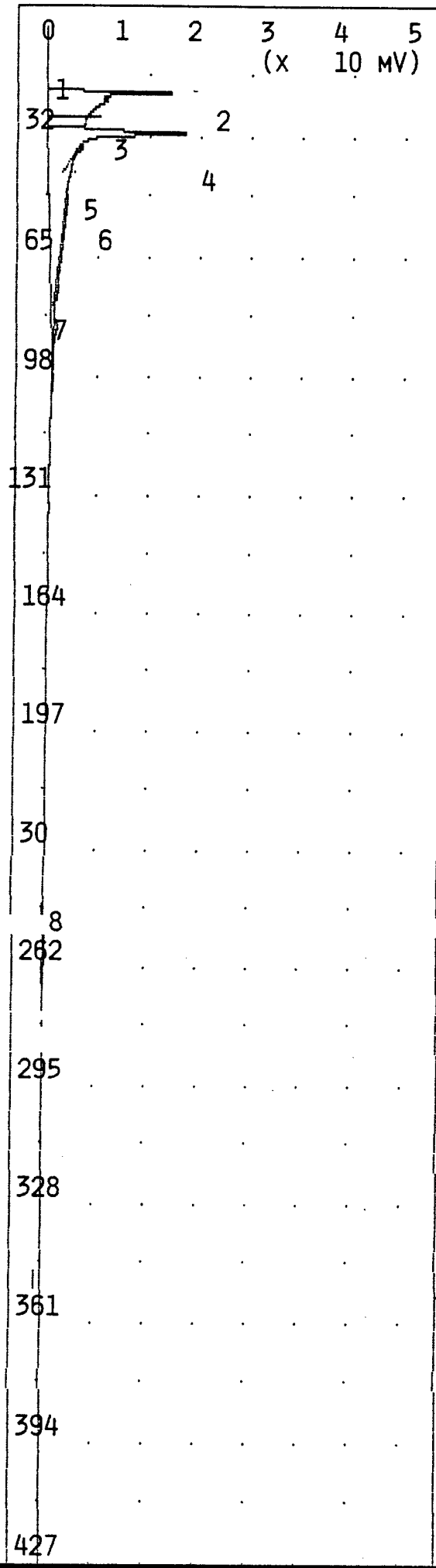
PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	8.308 MVS	18.6
2	UNKNOWN	52.69 MVS	20.8
3	UNKNOWN	3.019 MVS	47.6
4	UNKNOWN	1.875 MVS	82.5
5	UNKNOWN	0.587 MVS	248.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

ANALYSIS #25 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 2,95 16:49
SAMPLE TIME: AUG 2,95 16:42

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	125	ML/MIN
B/F FLOW	125	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	460.0	SEC

PEAK REPORT

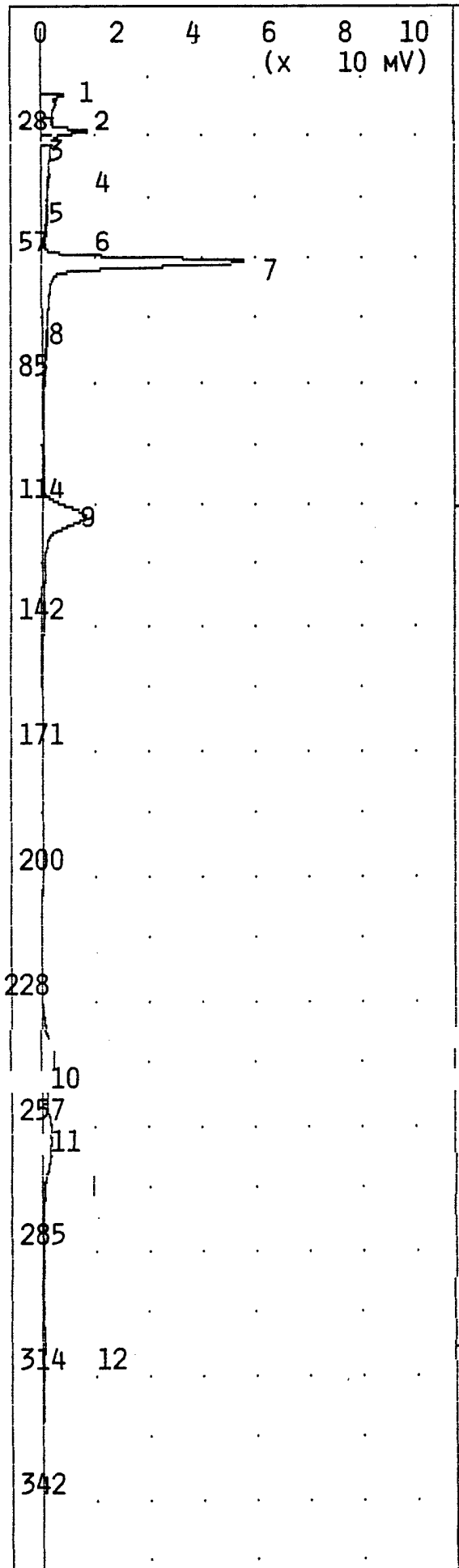
PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	0.203 MVS	16.9
2	UNKNOWN	22.51 MVS	18.5
3	UNKNOWN	52.71 MVS	20.5
4	UNKNOWN	145.5 MVS	29.6
5	UNKNOWN	0.768 MVS	33.9
6	UNKNOWN	4.567 MVS	47.2
7	UNKNOWN	1.567 MVS	82.6
8	UNKNOWN	1.111 MVS	245.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-006BH 13.5-15.0 17G

DET FLOW AND B/F FLOW VALUES ARE 12.5, BUT SHOW 125.

ANALYSIS #1 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 09:07
SAMPLE TIME: AUG 3,95 09:01

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	32	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	8.984 MVS	16.2
2	UNKNOWN	19.09 MVS	18.4
3	UNKNOWN	6.857 MVS	23.3
4	UNKNOWN	72.96 MVS	25.8
5	UNKNOWN	0.039 MVS	31.4
6	UNKNOWN	2.275 MVS	42.0
7	UNKNOWN	190.1 MVS	56.3
8	UNKNOWN	1.350 MVS	71.0
9	UNKNOWN	79.91 MVS	115.0
10	UNKNOWN	44.48 MVS	240.0
11	UNKNOWN	39.26 MVS	258.4
12	UNKNOWN	8.439 MVS	303.4

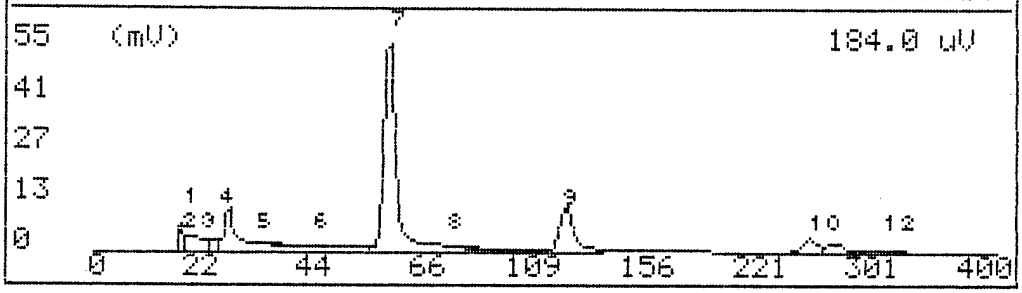
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

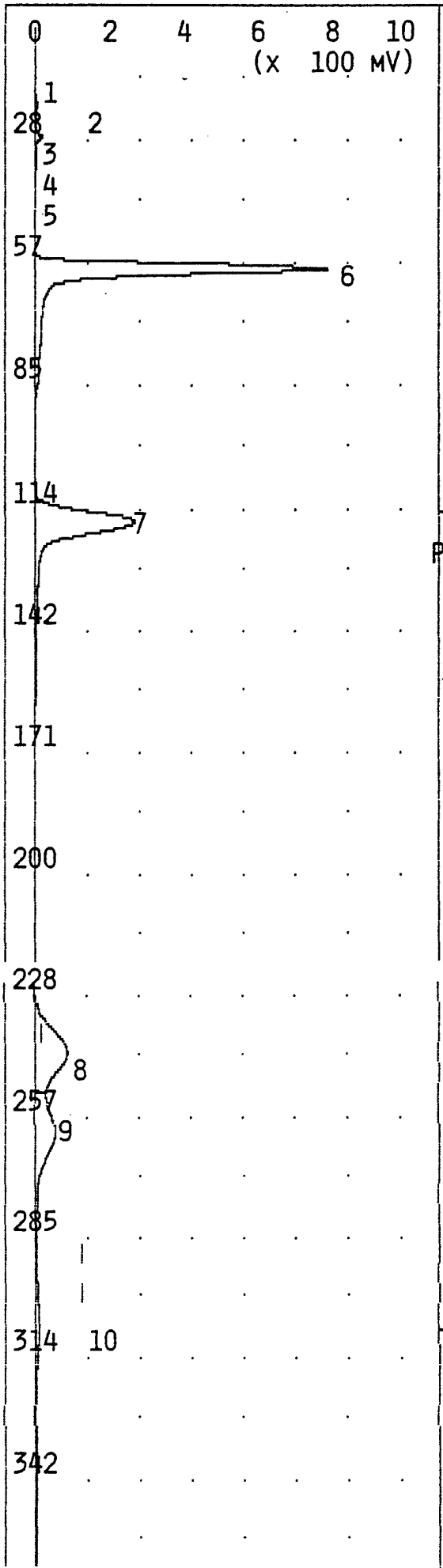
G.C. Ready 10S+ GC Function Aug 3,95 09:13
-- Analysis No 1 -- Run at - Aug 3,95 09:01 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
4	Unknown	72.96 mVS	-No-	25.8 sec
5	Unknown	0.039 mVS	-No-	31.4 sec
6	Unknown	2.275 mVS	-No-	42.0 sec
7	benzene	100.0 ppb	-No-	56.3 sec
8	Unknown	1.350 mVS	-No-	71.0 sec
9	toluene	100.0 ppb	-No-	115.0 sec
10	ethylbenzene	100.0 ppb	-No-	240.0 sec
11	m,p-xylene	200.0 ppb	-No-	258.4 sec
12	o-xylene	100.0 ppb	-No-	303.4 sec

- Detected 12 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #2 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 09:22
SAMPLE TIME: AUG 3,95 09:15

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	32	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	7.703	MVS	16.3
2	UNKNOWN	40.89	MVS	17.9
3	UNKNOWN	0.213	MVS	23.4
4	UNKNOWN	110.7	MVS	25.8
5	UNKNOWN	0.975	MVS	41.1
6	BENZENE	1.520	PPM	56.7
7	TOLUENE	2.310	PPM	115.0
8	ETHYLBENZENE	2.412	PPM	239.8
9	M,P-XYLENE	4.149	PPM	258.4
10	O-XYLENE	2.931	PPM	304.5

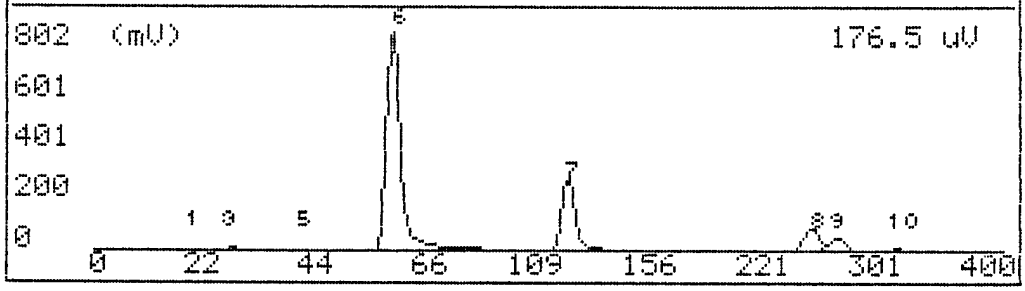
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
1 PPM BTEX

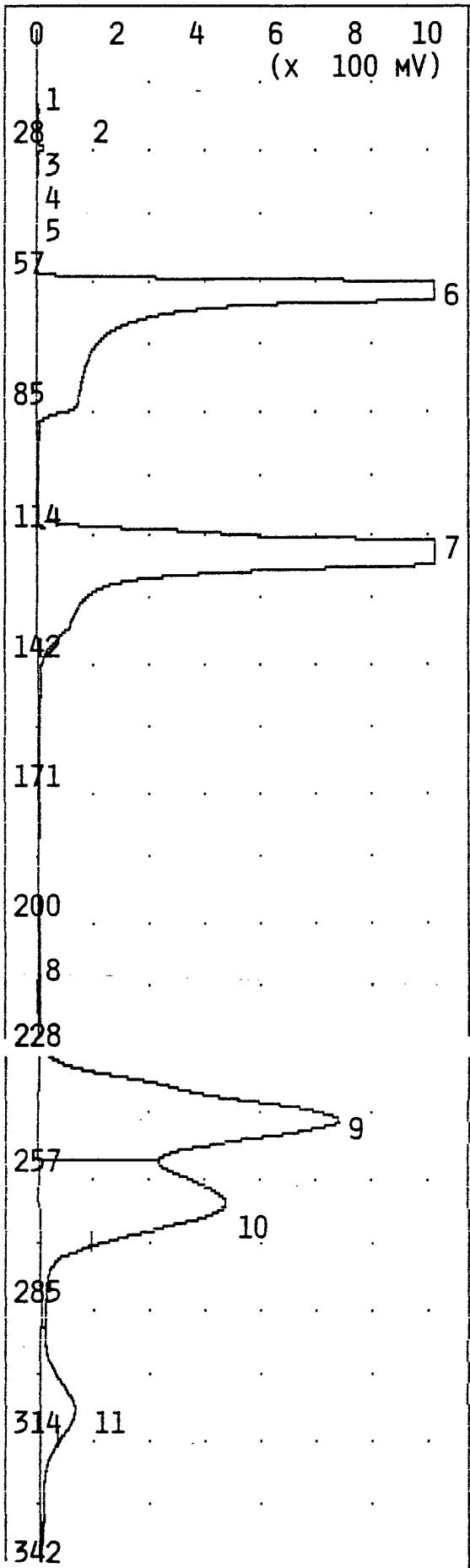
G.C. Ready 10S+ GC Function Aug 3,95 09:28
-- Analysis No 2 -- Run at - Aug 3,95 09:15 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
2	Unknown	40.89 mVS	-No-	17.9 sec
3	Unknown	0.213 mVS	-No-	23.4 sec
4	Unknown	110.7 mVS	-No-	25.8 sec
5	Unknown	0.975 mVS	-No-	41.1 sec
6	benzene	1.000 ppm	-No-	56.7 sec
7	toluene	1.000 ppm	-No-	115.0 sec
8	ethylbenzene	1.000 ppm	-No-	239.8 sec
9	m,p-xylene	2.000 ppm	-No-	258.4 sec
10	o-xylene	1.005 ppm	-No-	304.5 sec

- Detected 10 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #3 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 09:37
SAMPLE TIME: AUG 3,95 09:30

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	4.857	MVS	16.4
2	UNKNOWN	35.92	MVS	18.0
3	UNKNOWN	0.127	MVS	23.5
4	UNKNOWN	87.57	MVS	25.9
5	UNKNOWN	1.338	MVS	42.4
6	BENZENE	5.410	PPM	57.4
7	TOLUENE	7.490	PPM	116.4
8	UNKNOWN	2.705	MVS	206.8
9	ETHYLBENZENE	8.878	PPM	242.1
10	M,P-XYLENE	17.01	PPM	260.0
11	O-XYLENE	6.822	PPM	305.6

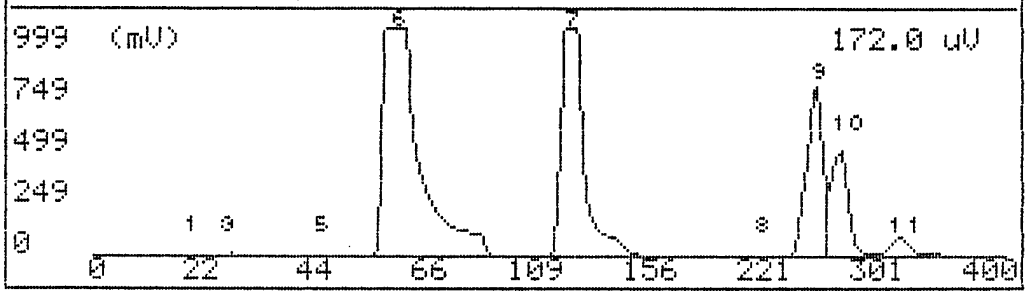
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
10 PPM BTEX

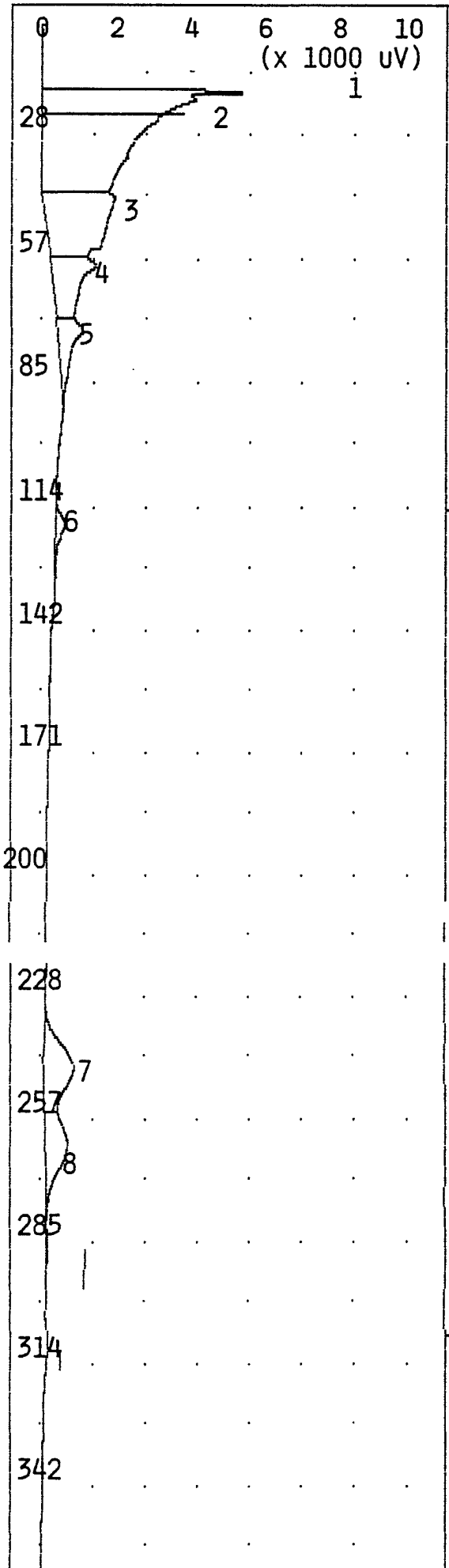
G.C. Ready 10S+ GC Function Aug 3,95 09:43
-- Analysis No 3 -- Run at - Aug 3,95 09:30 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	0.127 mVS	-No-	23.5 sec
4	Unknown	87.57 mVS	-No-	25.9 sec
5	Unknown	1.338 mVS	-No-	42.4 sec
6	benzene	10.00 ppm	-No-	57.4 sec
7	toluene	10.00 ppm	-No-	116.4 sec
8	Unknown	2.705 mVS	-No-	206.8 sec
9	ethylbenzene	10.00 ppm	-No-	242.1 sec
10	m,p-xylene	20.00 ppm	-No-	260.0 sec
11	o-xylene	10.02 ppm	-No-	305.6 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #6 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 10:24
SAMPLE TIME: AUG 3,95 10:17

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

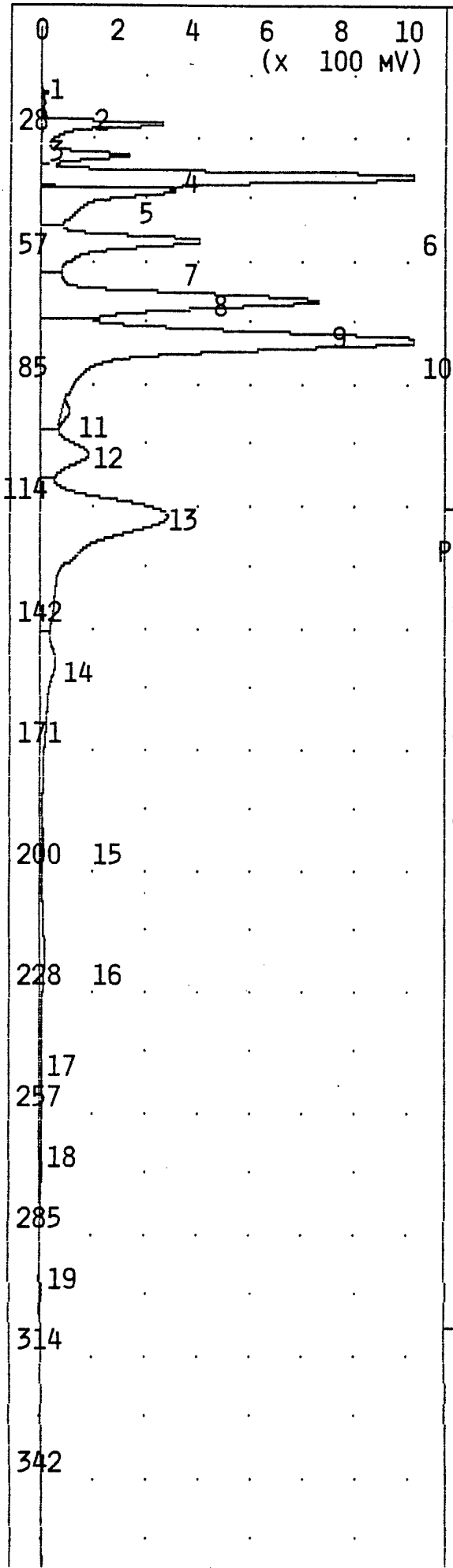
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	9.124 MVS	16.4
2	UNKNOWN	63.65 MVS	18.3
3	UNKNOWN	23.94 MVS	41.2
4	BENZENE	5.699 PPB	56.5
5	UNKNOWN	5.809 MVS	71.8
6	TOLUENE	2.027 PPB	115.6
7	ETHYLBENZENE	23.60 PPB	242.9
8	M,P-XYLENE	42.56 PPB	261.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #7 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95	10:36	
SAMPLE TIME: AUG 3,95	10:29	
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

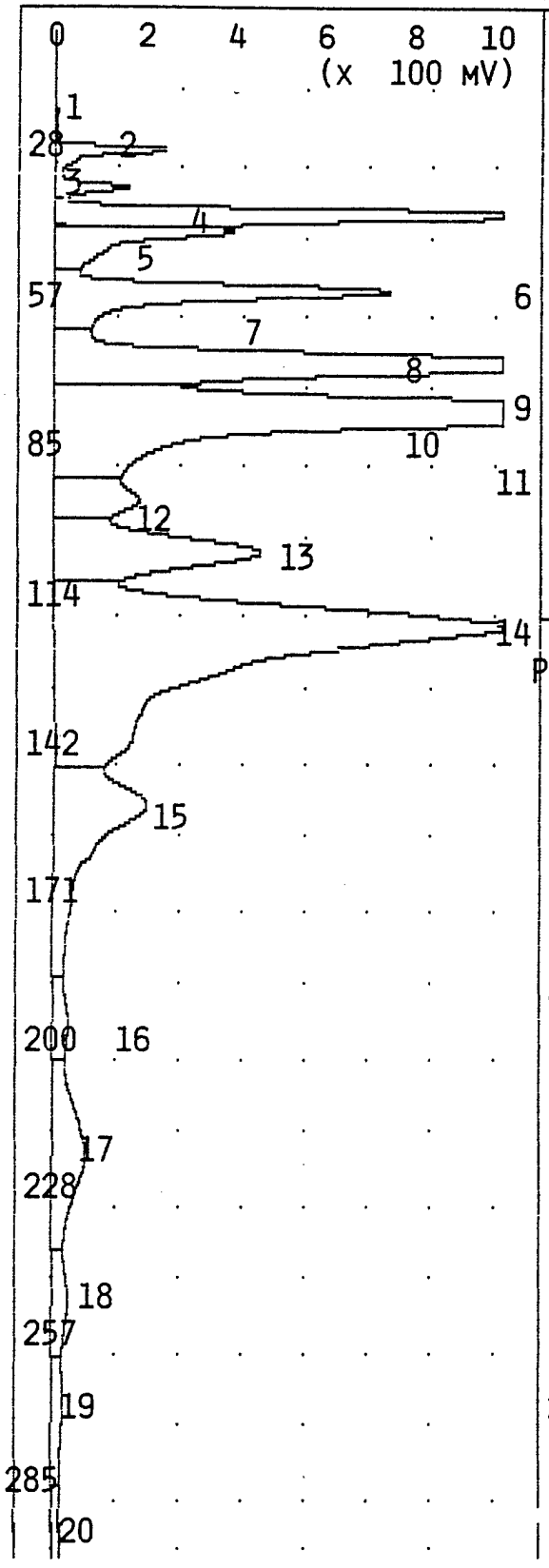
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	2.500	MVS	15.2
2	UNKNOWN	20.70	MVS	16.2
3	UNKNOWN	29.59	MVS	18.6
4	UNKNOWN	698.6	MVS	23.6
5	UNKNOWN	539.8	MVS	30.5
6	UNKNOWN	4.177	VSEC	35.7
7	UNKNOWN	1.434	VSEC	38.9
8	UNKNOWN	1.864	VSEC	50.5
9	UNKNOWN	3.507	VSEC	64.4
10	UNKNOWN	7.262	VSEC	73.6
11	UNKNOWN	73.56	MVS	90.1
12	UNKNOWN	964.1	MVS	100.2
13	TOLUENE	2.719	PPM	114.5
14	UNKNOWN	929.1	MVS	148.6
15	UNKNOWN	6.642	MVS	190.6
16	UNKNOWN	309.2	MVS	217.4
17	ETHYLBENZENE	413.3	PPB	244.2
18	M,P-XYLENE	12.35	PPB	260.8
19	O-XYLENE	17.31	PPB	289.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-007BH 1.0- 2.0 ~~1G~~
1/g SB

ANALYSIS #8 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 10:49
SAMPLE TIME: AUG 3,95 10:42

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

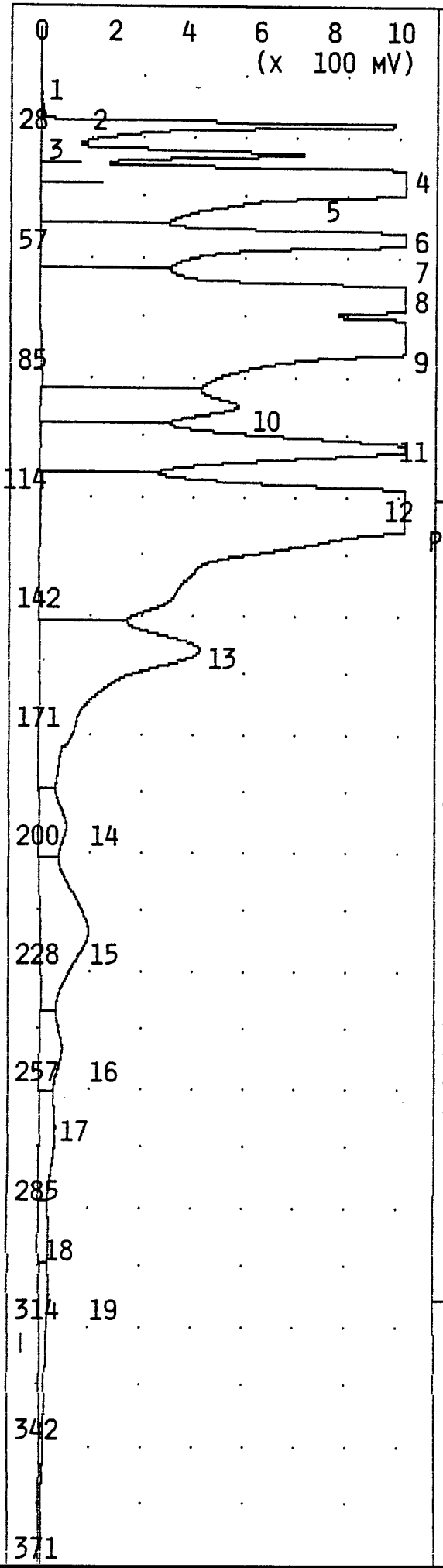
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.376	MVS	15.2
2	UNKNOWN	9.798	MVS	16.3
3	UNKNOWN	21.43	MVS	18.6
4	UNKNOWN	522.6	MVS	23.6
5	UNKNOWN	362.9	MVS	30.5
6	UNKNOWN	4.144	VSEC	35.8
7	UNKNOWN	1.507	VSEC	39.0
8	UNKNOWN	3.028	VSEC	50.6
9	UNKNOWN	2.519	VSEC	64.0
10	UNKNOWN	3.500	VSEC	66.4
11	UNKNOWN	14.52	VSEC	73.7
12	UNKNOWN	1.269	VSEC	90.5
13	UNKNOWN	3.462	VSEC	100.4
14	TOLUENE	9.774	PPM	114.6
15	UNKNOWN	3.406	VSEC	148.8
16	UNKNOWN	478.6	MVS	191.0
17	UNKNOWN	1.744	VSEC	216.6
18	ETHYLBENZENE	579.2	PPB	244.5
19	M,P-XYLENE	1.267	PPM	263.7
20	O-XYLENE	4.003	PPM	289.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-007BH 2.5- 3.5 17G

ANALYSIS #9 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 10:59
SAMPLE TIME: AUG 3,95 10:52

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

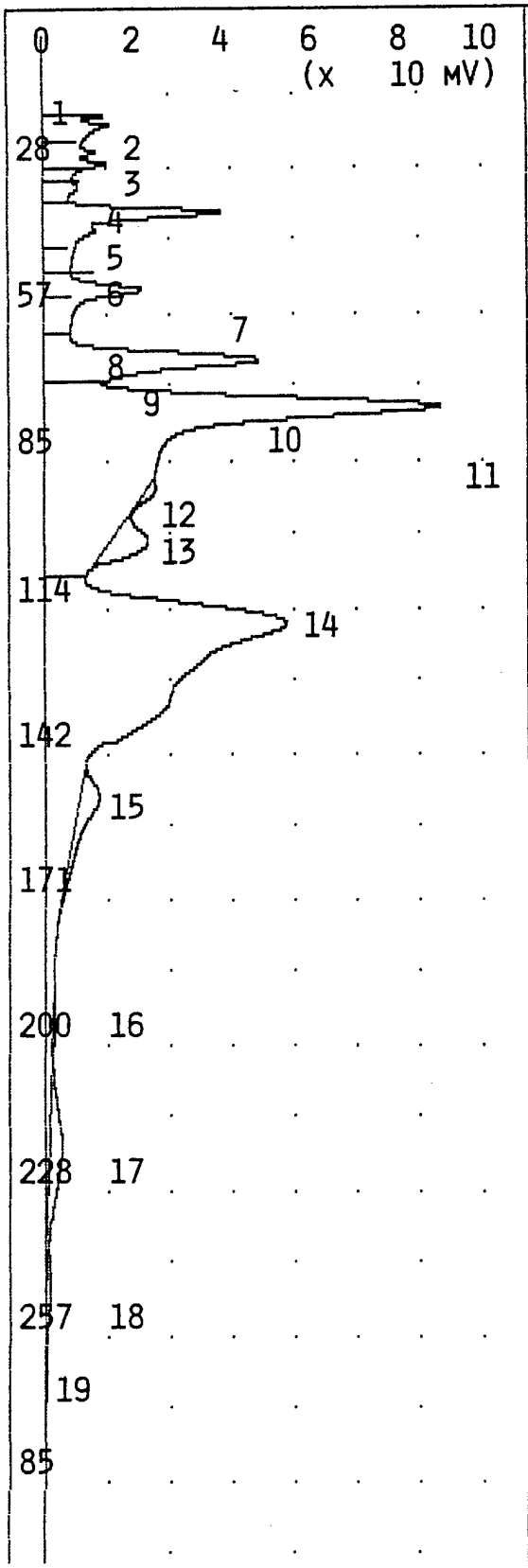
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.793	MVS	15.1
2	UNKNOWN	5.290	MVS	16.0
3	UNKNOWN	22.33	MVS	19.6
4	UNKNOWN	2.958	VSEC	23.8
5	UNKNOWN	1.805	VSEC	30.6
6	UNKNOWN	35.97	VSEC	37.3
7	UNKNOWN	10.65	VSEC	50.8
8	UNKNOWN	12.98	VSEC	63.9
9	UNKNOWN	26.57	VSEC	74.1
10	UNKNOWN	3.812	VSEC	90.5
11	UNKNOWN	8.188	VSEC	100.6
12	TOLUENE	26.12	PPM	115.6
13	UNKNOWN	7.298	VSEC	149.2
14	UNKNOWN	1.004	VSEC	191.8
15	UNKNOWN	3.284	VSEC	217.2
16	ETHYLBENZENE	955.5	PPB	245.3
17	M,P-XYLENE	2.327	PPM	264.0
18	UNKNOWN	393.8	MVS	289.8
19	O-XYLENE	4.903	PPM	302.9

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-007BH 4.0- 5.0 1G
50 MICROLITER INJECTION

ANALYSIS #10 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 11:09
SAMPLE TIME: AUG 3,95 11:02

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

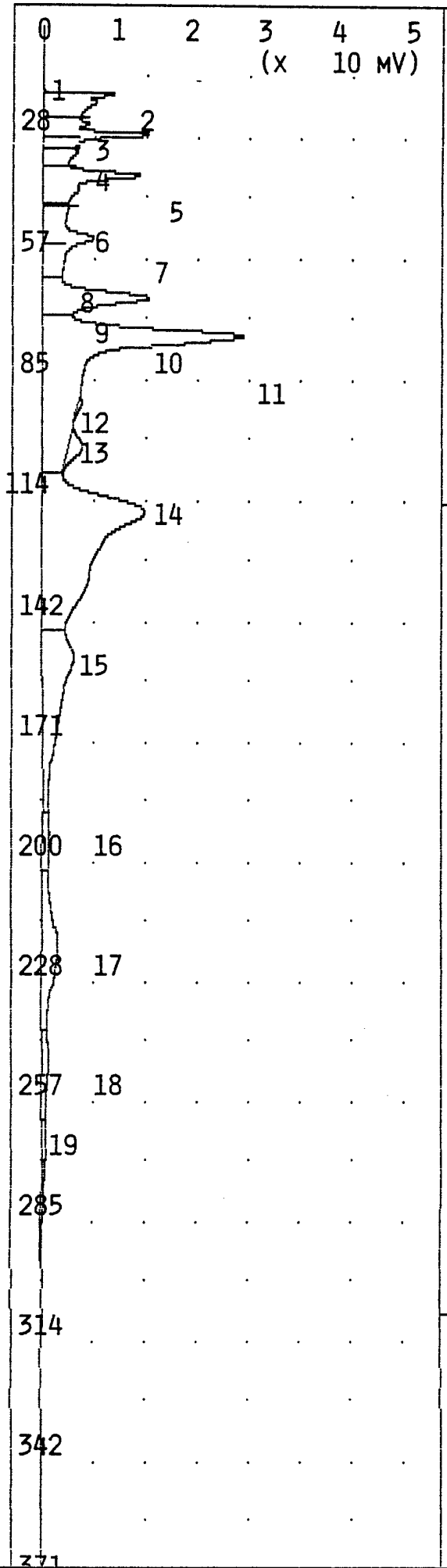
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.189	MVS	14.6
2	UNKNOWN	15.20	MVS	16.2
3	UNKNOWN	59.60	MVS	17.8
4	UNKNOWN	26.03	MVS	23.5
5	UNKNOWN	41.86	MVS	25.8
6	UNKNOWN	30.13	MVS	30.3
7	UNKNOWN	114.6	MVS	35.4
8	UNKNOWN	81.19	MVS	38.8
9	UNKNOWN	131.2	MVS	50.4
10	UNKNOWN	241.2	MVS	64.2
11	UNKNOWN	1.117	VSEC	73.4
12	UNKNOWN	7.807	MVS	88.6
13	UNKNOWN	53.13	MVS	99.2
14	TOLUENE	944.9	PPB	115.0
15	UNKNOWN	45.15	MVS	149.4
16	UNKNOWN	4.002	MVS	191.4
17	UNKNOWN	56.12	MVS	218.0
18	ETHYLBENZENE	28.63	PPB	245.6
19	M,P-XYLENE	46.07	PPB	262.6
20	UNKNOWN	2.062	MVS	351.3

LH

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-007BH 9.0-10.0 20G
50 MICROLITER INJECTION

ANALYSIS #11 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 11:20
SAMPLE TIME: AUG 3,95 11:13

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

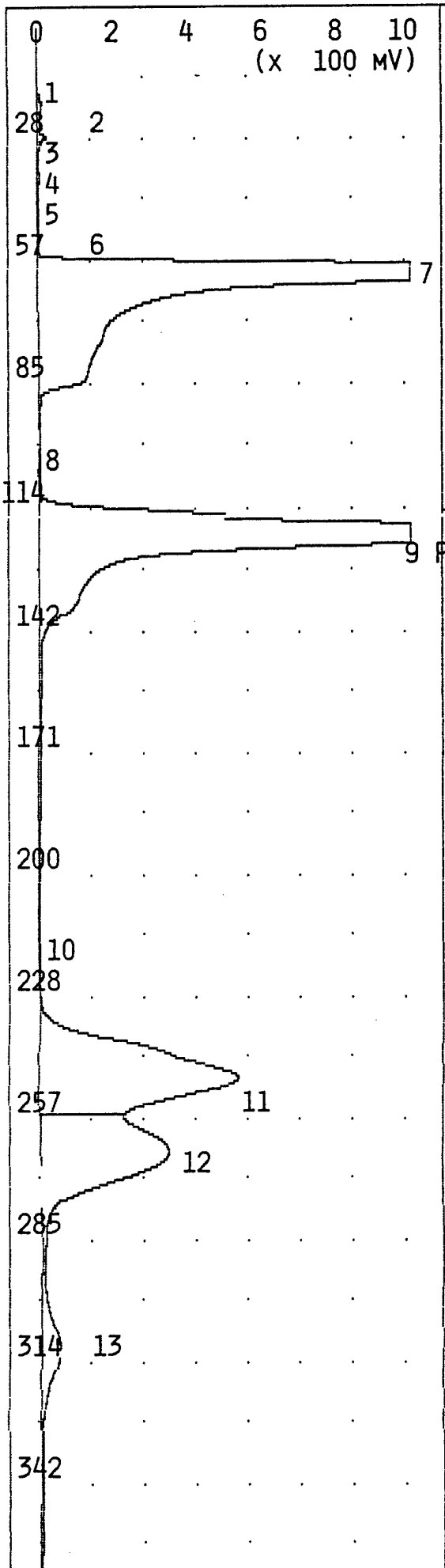
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.254	MVS	14.9
2	UNKNOWN	13.50	MVS	16.3
3	UNKNOWN	31.76	MVS	18.4
4	UNKNOWN	12.93	MVS	23.6
5	UNKNOWN	35.89	MVS	26.0
6	UNKNOWN	17.52	MVS	29.8
7	UNKNOWN	40.36	MVS	35.5
8	UNKNOWN	36.74	MVS	38.9
9	UNKNOWN	49.46	MVS	50.4
10	UNKNOWN	68.03	MVS	64.2
11	UNKNOWN	268.3	MVS	73.4
12	UNKNOWN	1.224	MVS	89.2
13	UNKNOWN	10.27	MVS	99.7
14	TOLUENE	193.6	PPB	114.9
15	UNKNOWN	101.0	MVS	149.4
16	UNKNOWN	12.60	MVS	191.4
17	UNKNOWN	50.98	MVS	219.0
18	ETHYLBENZENE	32.45	PPB	245.3
19	M,P-XYLENE	37.85	PPB	261.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-007BH 140-15.0 20

ANALYSIS #12 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 11:30
SAMPLE TIME: AUG 3,95 11:23

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	13.64	MVS	16.4
2	UNKNOWN	71.71	MVS	18.0
3	UNKNOWN	0.149	MVS	23.5
4	UNKNOWN	81.93	MVS	26.1
5	UNKNOWN	64.68	MVS	35.6
6	UNKNOWN	19.05	MVS	50.6
7	BENZENE	10.80	PPM	58.0
8	UNKNOWN	3.518	MVS	98.8
9	TOLUENE	9.385	PPM	117.7
10	UNKNOWN	3.854	MVS	212.6
11	ETHYLBENZENE	7.357	PPM	245.6
12	M,P-XYLENE	15.02	PPM	262.9
13	O-XYLENE	6.153	PPM	309.3

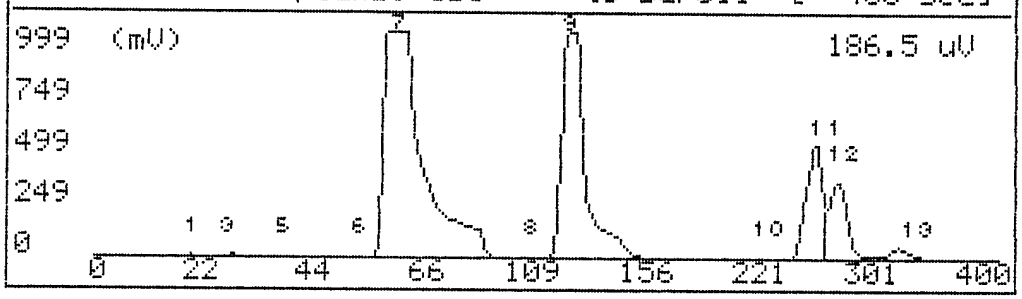
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
10 PPM BTEX

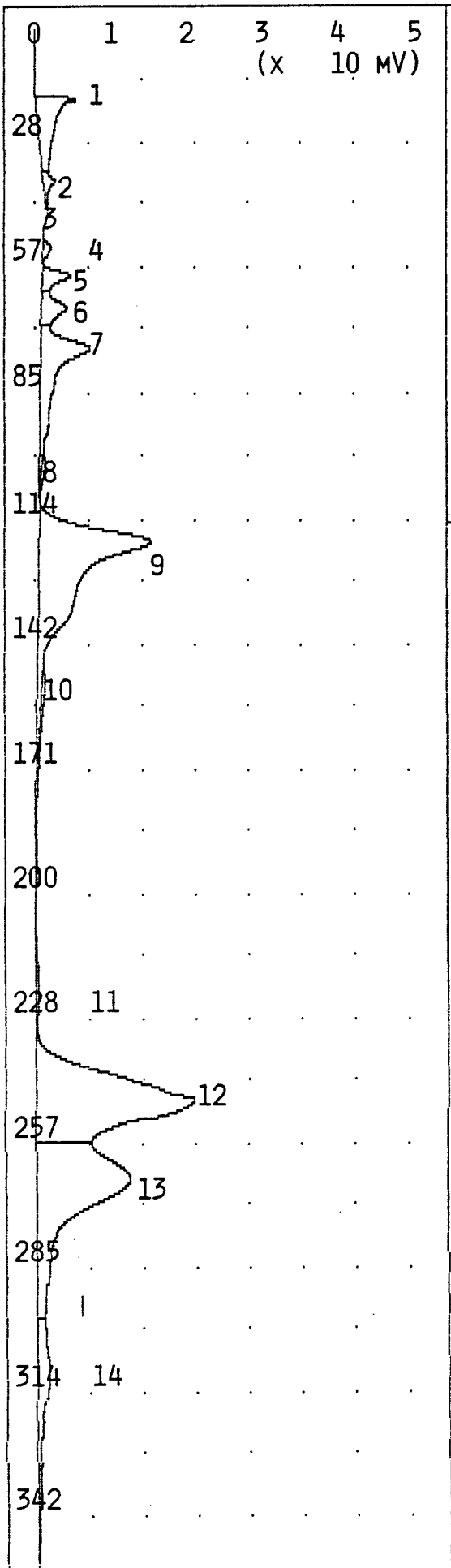
G.C. Ready 10S+ GC Function Aug 3,95 11:33
-- Analysis No 12 -- Run at - Aug 3,95 11:23 -

Pk No	Name	Conc/Area		Alarm	Ret.Time
5	Unknown	64.80	mVS	-No-	35.6 sec
6	Unknown	19.11	mVS	-No-	50.6 sec
7	benzene	10.00	ppm	-No-	58.0 sec
8	Unknown	3.518	mVS	-No-	98.8 sec
9	toluene	10.00	ppm	-No-	117.7 sec
10	Unknown	3.854	mVS	-No-	212.6 sec
11	ethylbenzene	10.00	ppm	-No-	245.6 sec
12	m,p-xylene	20.00	ppm	-No-	262.9 sec
13	o-xylene	10.05	ppm	-No-	309.3 sec

- Detected 13 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #13 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95	11:43	
SAMPLE TIME: AUG 3,95	11:37	
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

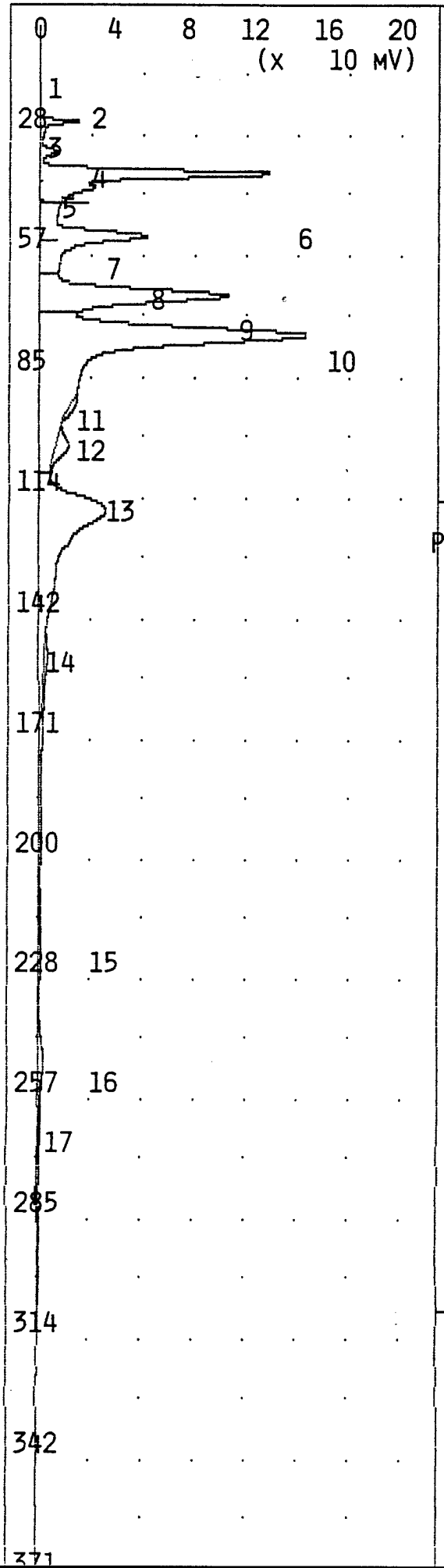
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	44.05	MVS	16.4
2	UNKNOWN	5.828	MVS	35.4
3	UNKNOWN	0.568	MVS	40.8
4	UNKNOWN	2.857	MVS	50.4
5	BENZENE	6.464	PPB	57.2
6	UNKNOWN	15.90	MVS	64.5
7	UNKNOWN	60.32	MVS	73.7
8	UNKNOWN	1.472	MVS	100.5
9	TOLUENE	162.9	PPB	117.2
10	UNKNOWN	3.613	MVS	149.6
11	UNKNOWN	5.522	MVS	219.6
12	ETHYLBENZENE	288.3	PPB	244.8
13	M,P-XYLENE	609.1	PPB	263.2
14	O-XYLENE	298.4	PPB	308.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #14 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95	11:53	
SAMPLE TIME: AUG 3,95	11:46	
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

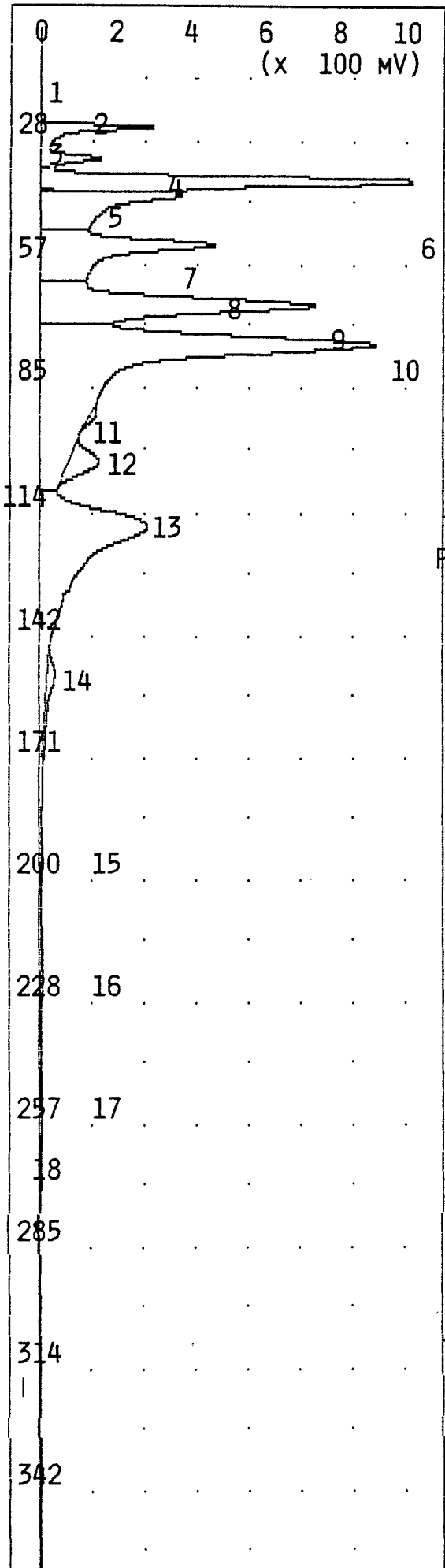
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.043	MVS	15.0
2	UNKNOWN	0.117	MVS	16.0
3	UNKNOWN	0.324	MVS	18.4
4	UNKNOWN	38.29	MVS	23.5
5	UNKNOWN	22.33	MVS	30.4
6	UNKNOWN	312.3	MVS	35.6
7	UNKNOWN	148.2	MVS	39.0
8	UNKNOWN	272.5	MVS	50.6
9	UNKNOWN	448.1	MVS	64.5
10	UNKNOWN	1.196	VSEC	73.8
11	UNKNOWN	11.78	MVS	88.2
12	UNKNOWN	34.58	MVS	100.0
13	TOLUENE	438.1	PPB	115.3
14	UNKNOWN	10.97	MVS	149.8
15	UNKNOWN	9.738	MVS	218.4
16	ETHYLBENZENE	71.98	PPB	246.4
17	M,P-XYLENE	100.0	PPB	264.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-007BH 2.5-3.5 17G
RESHOT
10 MICROLITER INJECTION

ANALYSIS #15 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 12:03
SAMPLE TIME: AUG 3,95 11:57

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

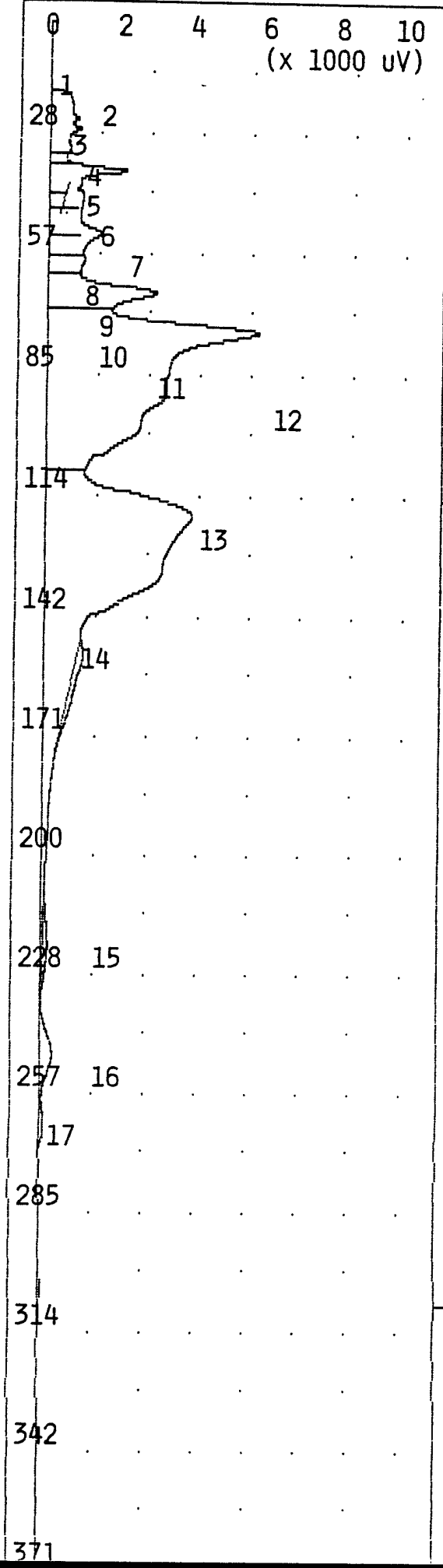
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.146	MVS	14.8
2	UNKNOWN	0.346	MVS	15.8
3	UNKNOWN	3.446	MVS	19.5
4	UNKNOWN	599.3	MVS	23.4
5	UNKNOWN	382.2	MVS	30.4
6	UNKNOWN	3.617	VSEC	35.8
7	UNKNOWN	1.959	VSEC	39.0
8	UNKNOWN	2.588	VSEC	50.6
9	UNKNOWN	3.819	VSEC	64.6
10	UNKNOWN	8.682	VSEC	73.8
11	UNKNOWN	41.51	MVS	89.2
12	UNKNOWN	461.4	MVS	100.5
13	TOLUENE	3.937	PPM	115.2
14	UNKNOWN	173.3	MVS	149.8
15	UNKNOWN	9.054	MVS	192.0
16	UNKNOWN	69.80	MVS	218.6
17	ETHYLBENZENE	57.87	PPB	246.1
18	M,P-XYLENE	65.58	PPB	264.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-007BH 4.0-5.0 17G
RESHOT
10 MICROLITER INJECTION

ANALYSIS #16 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 12:16		
SAMPLE TIME: AUG 3,95 12:10		
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

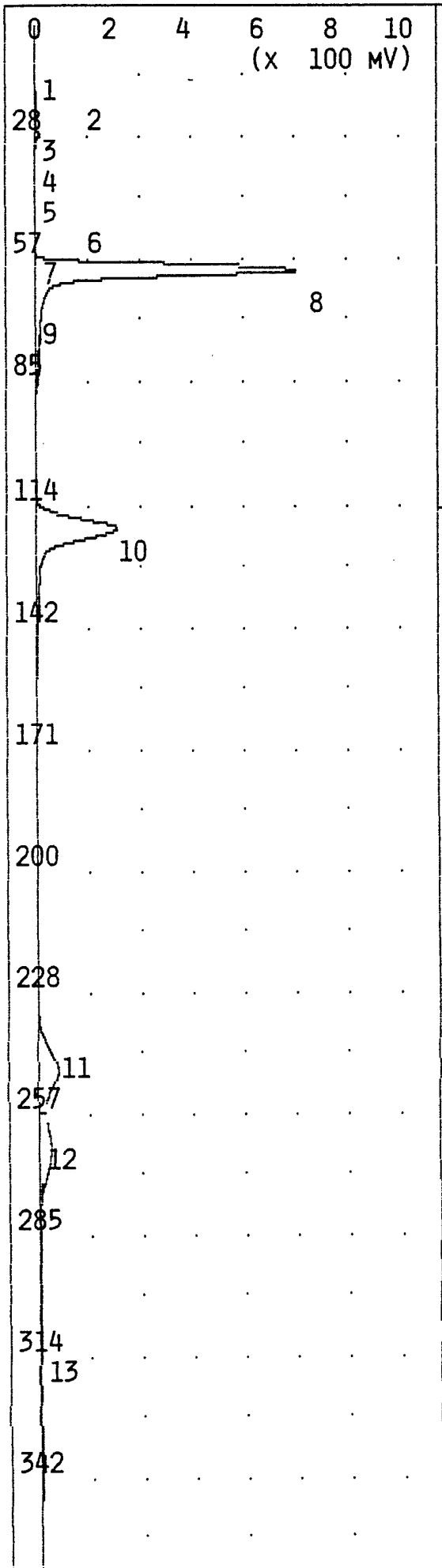
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.052	MVS	14.6
2	UNKNOWN	0.039	MVS	15.9
3	UNKNOWN	4.262	MVS	20.2
4	UNKNOWN	1.979	MVS	23.5
5	UNKNOWN	5.336	MVS	25.8
6	UNKNOWN	0.087	MVS	30.2
7	UNKNOWN	9.918	MVS	35.2
8	UNKNOWN	7.302	MVS	41.2
9	UNKNOWN	11.61	MVS	50.5
10	BENZENE	2.827	PPB	57.2
11	UNKNOWN	18.79	MVS	64.5
12	UNKNOWN	121.5	MVS	73.8
13	TOLUENE	140.9	PPB	117.2
14	UNKNOWN	2.407	MVS	150.4
15	UNKNOWN	1.847	MVS	220.4
16	ETHYLBENZENE	22.99	PPB	245.6
17	M,P-XYLENE	24.41	PPB	263.7

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
652-007BH 9.0-10.0 20G
RESHOT
10 MICROLITER INJECTION

ANALYSIS #17 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 13:15		
SAMPLE TIME: AUG 3,95 13:08		
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

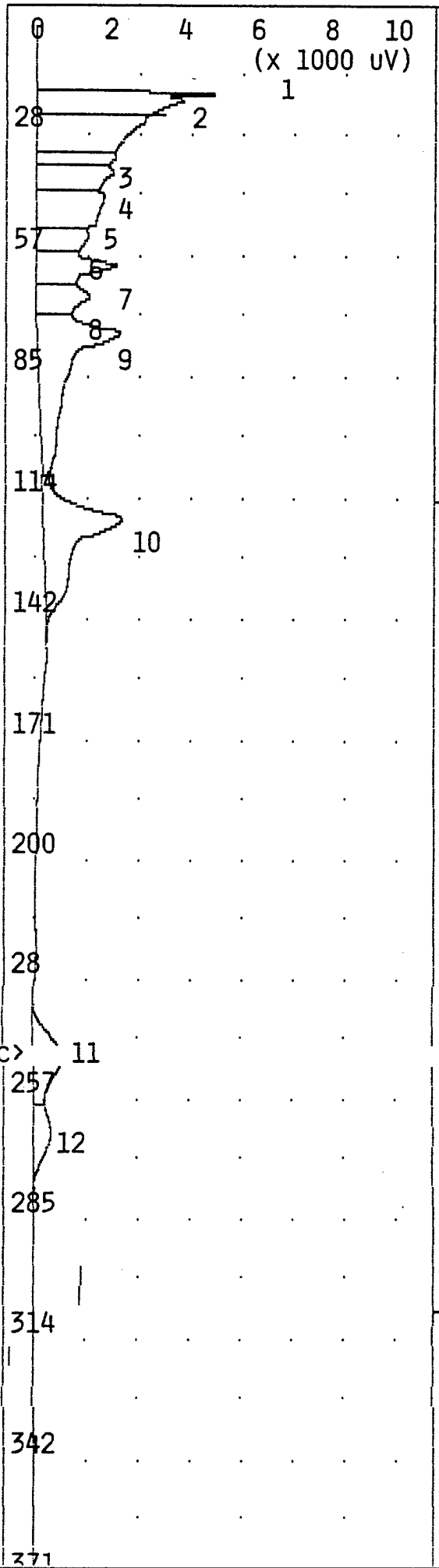
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	9.272	MVS	16.5
2	UNKNOWN	21.16	MVS	18.5
3	UNKNOWN	6.205	MVS	23.7
4	UNKNOWN	81.14	MVS	26.2
5	UNKNOWN	0.968	MVS	35.6
6	UNKNOWN	0.737	MVS	41.2
7	UNKNOWN	0.651	MVS	50.8
8	BENZENE	920.8	PPB	57.7
9	UNKNOWN	24.49	MVS	72.8
10	TOLUENE	840.5	PPB	117.3
11	ETHYLBENZENE	654.0	PPB	244.8
12	M,P-XYLENE	1.310	PPM	263.2
13	O-XYLENE	548.3	PPB	309.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
1 PPM BTEX

ANALYSIS #18 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 13:27
SAMPLE TIME: AUG 3,95 13:20

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

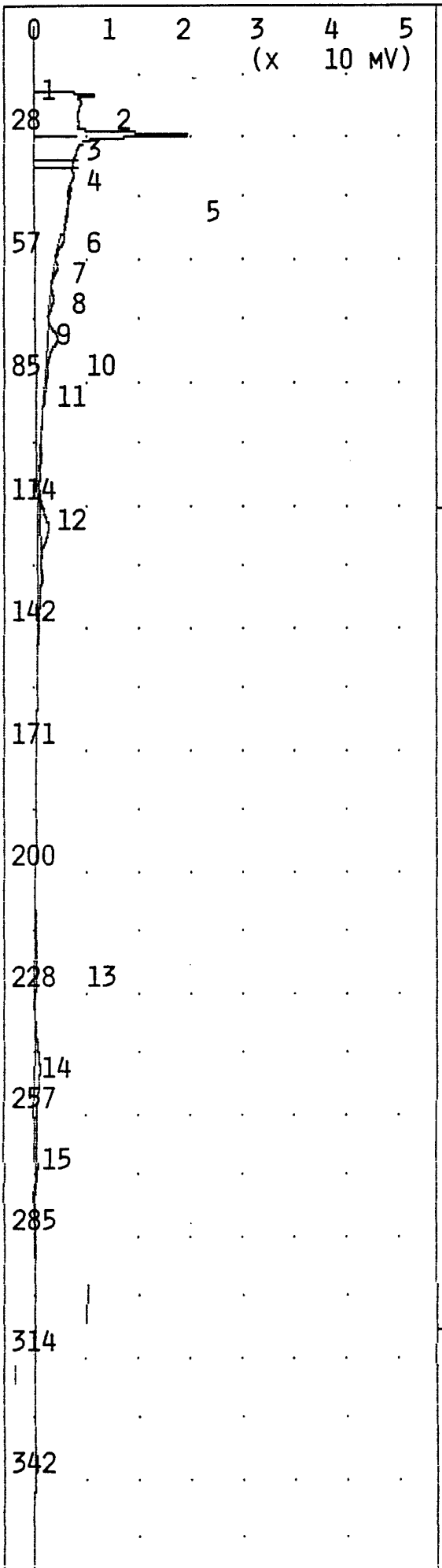
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	7.205	MVS	16.4
2	UNKNOWN	44.85	MVS	18.3
3	UNKNOWN	7.104	MVS	32.0
4	UNKNOWN	12.49	MVS	35.6
5	UNKNOWN	17.19	MVS	41.1
6	UNKNOWN	7.293	MVS	50.6
7	BENZENE	6.266	PPB	57.2
8	UNKNOWN	9.096	MVS	64.6
9	UNKNOWN	31.03	MVS	73.6
10	TOLUENE	34.26	PPB	117.4
11	ETHYLBENZENE	25.45	PPB	245.0
12	M,P-XYLENE	35.27	PPB	263.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
~~1 PPM BTEX~~
AIR BLANK JB

ANALYSIS #19 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95	13:38	
SAMPLE TIME: AUG 3,95	13:31	
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

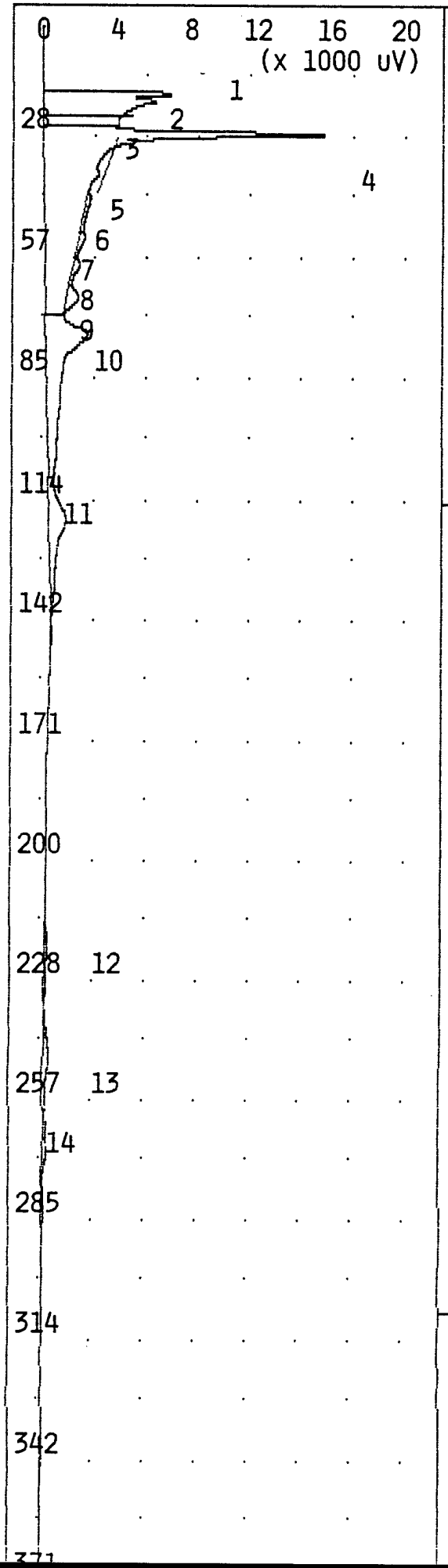
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	0.140 MVS	14.8
2	UNKNOWN	11.25 MVS	16.5
3	UNKNOWN	32.71 MVS	18.6
4	UNKNOWN	12.54 MVS	23.7
5	UNKNOWN	255.0 MVS	26.2
6	UNKNOWN	0.905 MVS	35.6
7	UNKNOWN	2.751 MVS	40.8
8	UNKNOWN	1.727 MVS	50.4
9	BENZENE	0.444 PPB	57.1
10	UNKNOWN	1.480 MVS	64.5
11	UNKNOWN	7.710 MVS	73.4
12	TOLUENE	12.50 PPB	116.1
13	UNKNOWN	1.027 MVS	217.4
14	ETHYLBENZENE	17.90 PPB	244.5
15	M,P-XYLENE	25.07 PPB	263.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-001MW 0.5- 15 17G

ANALYSIS #20 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 13:48		
SAMPLE TIME: AUG 3,95 13:41		
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

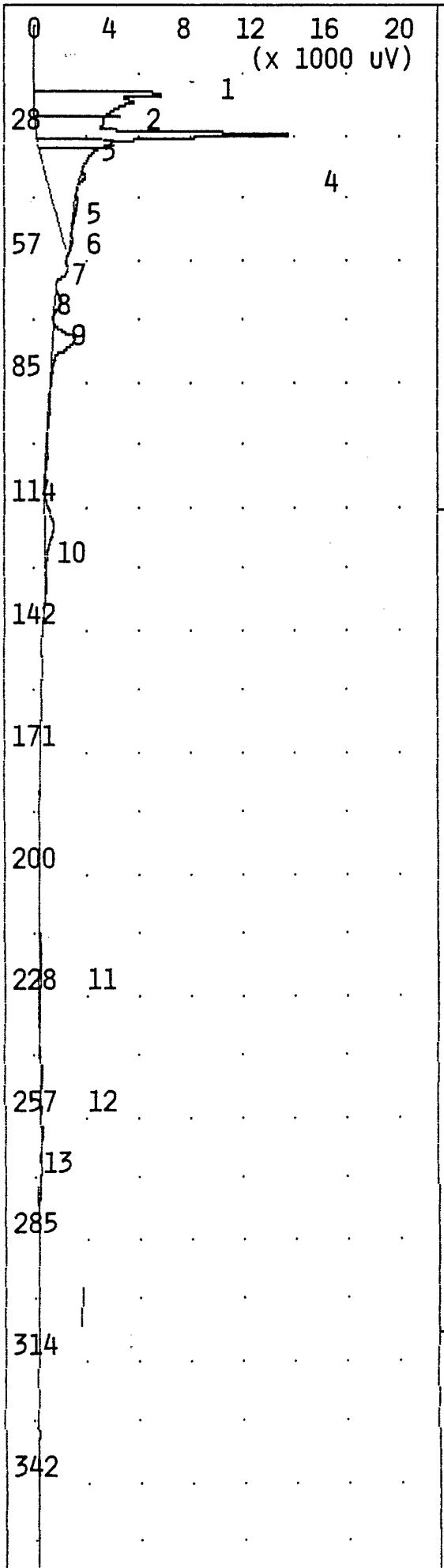
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	10.79	MVS	16.4
2	UNKNOWN	36.67	MVS	18.6
3	UNKNOWN	0.161	MVS	23.8
4	UNKNOWN	123.0	MVS	26.2
5	UNKNOWN	0.491	MVS	35.6
6	UNKNOWN	1.543	MVS	40.8
7	UNKNOWN	1.375	MVS	50.6
8	BENZENE	0.833	PPB	57.2
9	UNKNOWN	2.557	MVS	64.6
10	UNKNOWN	35.63	MVS	73.6
11	TOLUENE	19.39	PPB	116.6
12	UNKNOWN	1.156	MVS	218.8
13	ETHYLBENZENE	8.680	PPB	246.1
14	M,P-XYLENE	12.81	PPB	264.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-001MW 4.0- 5.0 17G

ANALYSIS #21 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 14:00		
SAMPLE TIME: AUG 3,95 13:53		
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

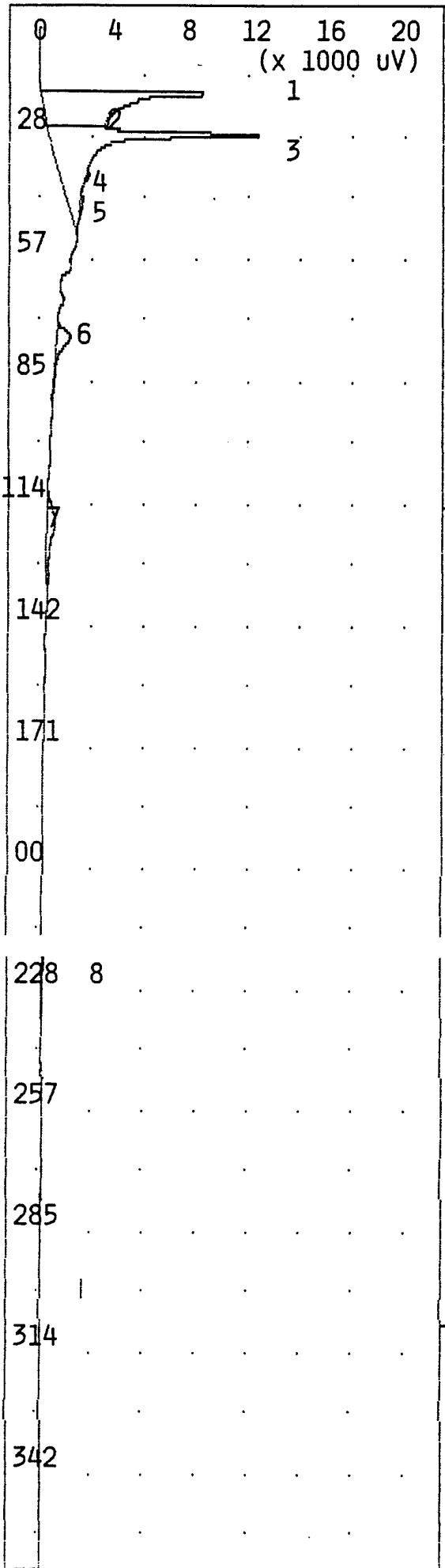
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	11.11 MVS	16.4
2	UNKNOWN	24.00 MVS	18.6
3	UNKNOWN	6.109 MVS	23.7
4	UNKNOWN	55.80 MVS	26.2
5	UNKNOWN	0.508 MVS	35.8
6	UNKNOWN	0.730 MVS	41.0
7	UNKNOWN	0.199 MVS	50.3
8	UNKNOWN	1.028 MVS	64.5
9	UNKNOWN	6.645 MVS	73.6
10	TOLUENE	5.726 PPB	117.0
11	UNKNOWN	0.772 MVS	219.2
12	ETHYLBENZENE	1.942 PPB	245.8
13	M,P-XYLENE	0.223 PPB	263.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-001MW 9.0-10.0 14G

ANALYSIS #22 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 14:31		
SAMPLE TIME: AUG 3,95 14:25		
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

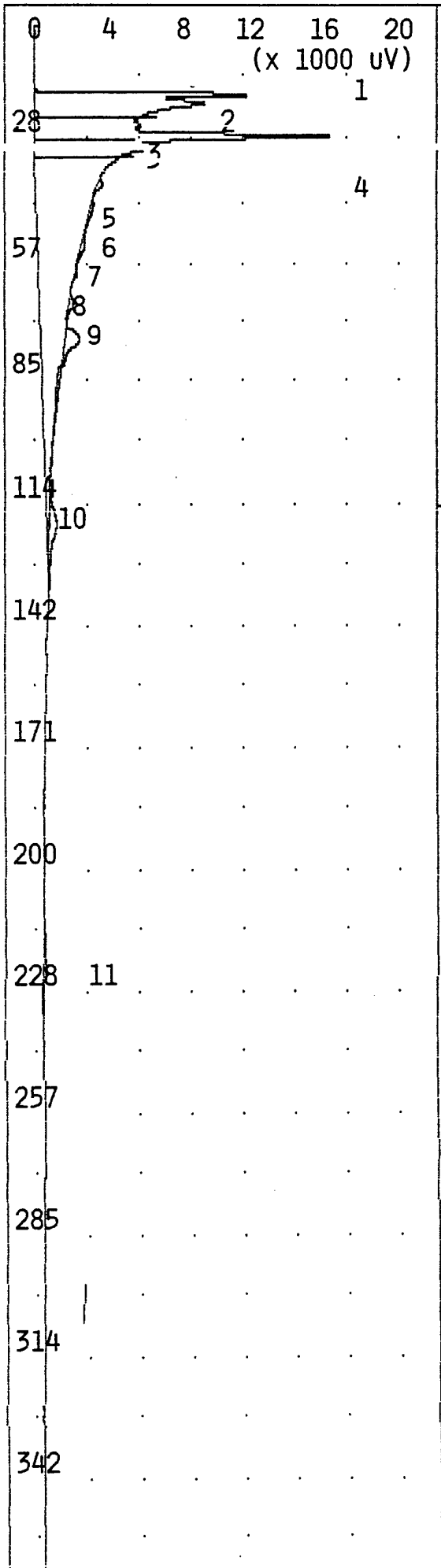
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	44.08	MVS	16.5
2	UNKNOWN	0.108	MVS	23.6
3	UNKNOWN	47.87	MVS	26.2
4	UNKNOWN	0.238	MVS	35.4
5	UNKNOWN	0.427	MVS	40.9
6	UNKNOWN	3.560	MVS	73.4
7	TOLUENE	4.539	PPB	116.4
8	UNKNOWN	0.833	MVS	219.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-001MWA ~~0.0~~ 0.5 1.5 14G

ANALYSIS #23 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 14:41		
SAMPLE TIME: AUG 3,95 14:34		
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

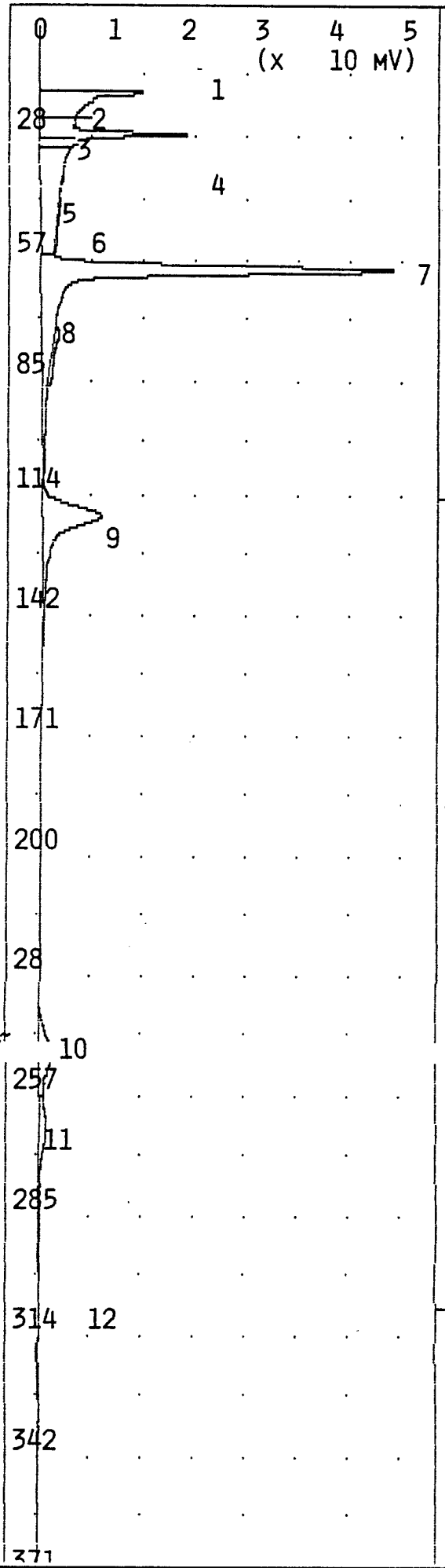
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	16.60	MVS	16.5
2	UNKNOWN	39.38	MVS	18.8
3	UNKNOWN	10.65	MVS	23.9
4	UNKNOWN	178.3	MVS	26.3
5	UNKNOWN	0.501	MVS	36.0
6	UNKNOWN	1.708	MVS	40.8
7	BENZENE	0.101	PPB	57.4
8	UNKNOWN	0.723	MVS	64.5
9	UNKNOWN	1.830	MVS	73.4
10	TOLUENE	3.816	PPB	116.5
11	UNKNOWN	0.702	MVS	218.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-001MWA 4.0- 5.0 20G

ANALYSIS #25 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 15:22		
SAMPLE TIME: AUG 3,95 15:15		
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	22.60	MVS	16.4
2	UNKNOWN	31.60	MVS	18.6
3	UNKNOWN	9.544	MVS	23.8
4	UNKNOWN	112.1	MVS	26.2
5	UNKNOWN	0.360	MVS	35.8
6	UNKNOWN	1.537	MVS	40.8
7	BENZENE	99.69	PPB	57.4
8	UNKNOWN	5.563	MVS	73.2
9	TOLUENE	77.42	PPB	117.3
10	ETHYLBENZENE	48.07	PPB	245.0
11	M,P-XYLENE	75.64	PPB	263.4
12	O-XYLENE	21.68	PPB	308.0

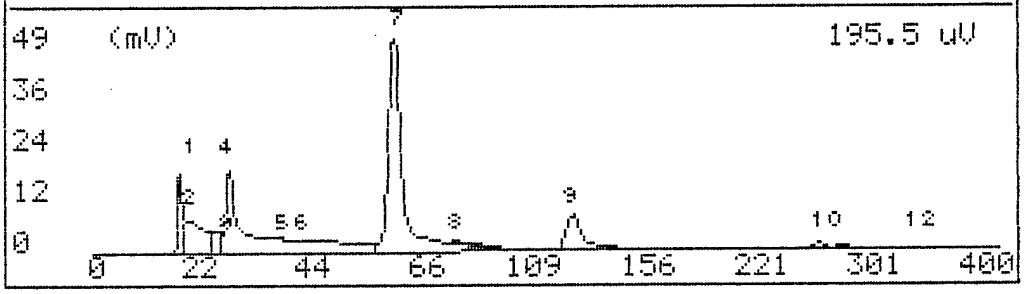
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

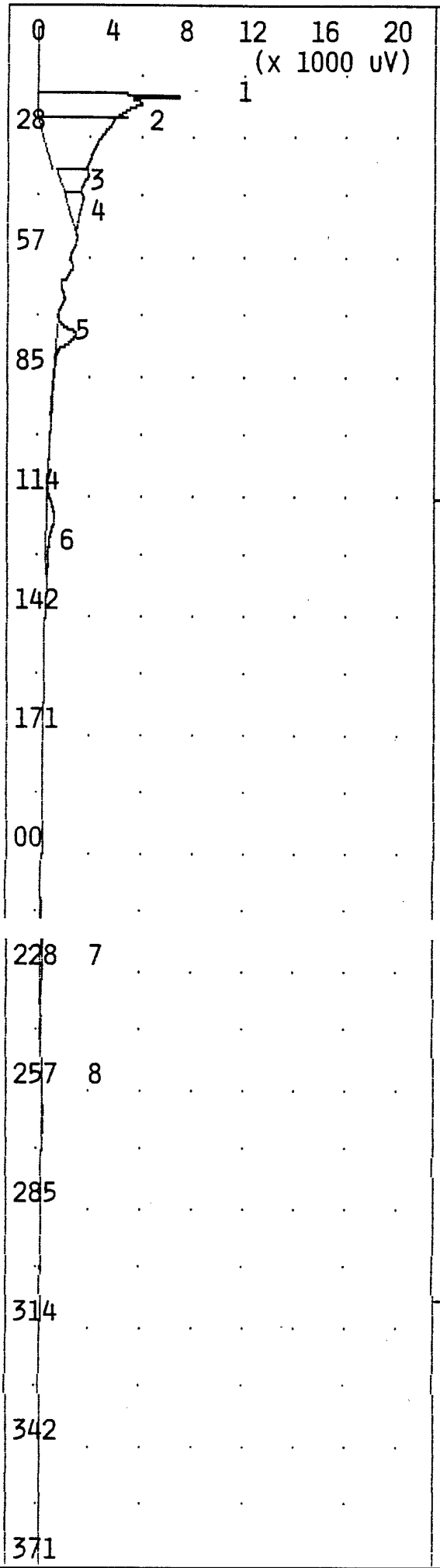
G.C. Ready 10S+ GC Function Aug 3,95 15:25
-- Analysis No 25 -- Run at - Aug 3,95 15:15 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
4	Unknown	112.1 mVS	-No-	26.2 sec
5	Unknown	0.360 mVS	-No-	35.8 sec
6	Unknown	1.537 mVS	-No-	40.8 sec
7	benzene	100.0 ppb	-No-	57.4 sec
8	Unknown	5.563 mVS	-No-	73.2 sec
9	toluene	100.0 ppb	-No-	117.3 sec
10	ethylbenzene	100.0 ppb	-No-	245.0 sec
11	m,p-xylene	200.0 ppb	-No-	263.4 sec
12	o-xylene	100.0 ppb	-No-	308.0 sec

- Detected 12 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #26 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 15:33
SAMPLE TIME: AUG 3,95 15:26

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

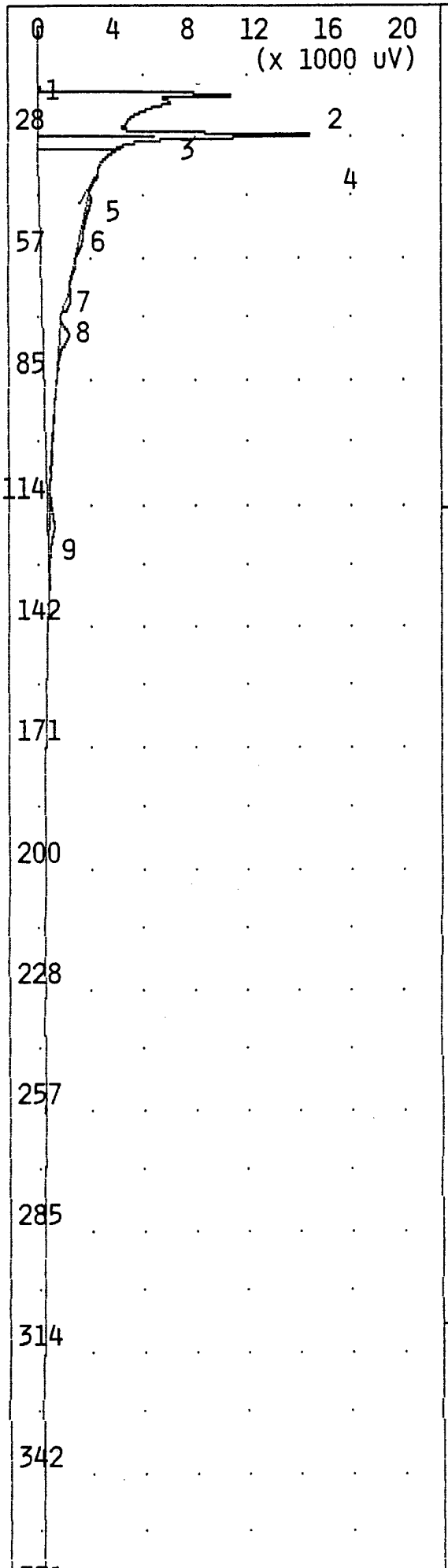
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	10.76	MVS	16.5
2	UNKNOWN	57.70	MVS	18.2
3	UNKNOWN	6.973	MVS	35.9
4	UNKNOWN	5.138	MVS	40.8
5	UNKNOWN	4.535	MVS	73.4
6	TOLUENE	5.501	PPB	117.3
7	UNKNOWN	0.662	MVS	221.0
8	ETHYLBENZENE	3.108	PPB	245.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #27 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 3,95 15:42
SAMPLE TIME: AUG 3,95 15:35

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

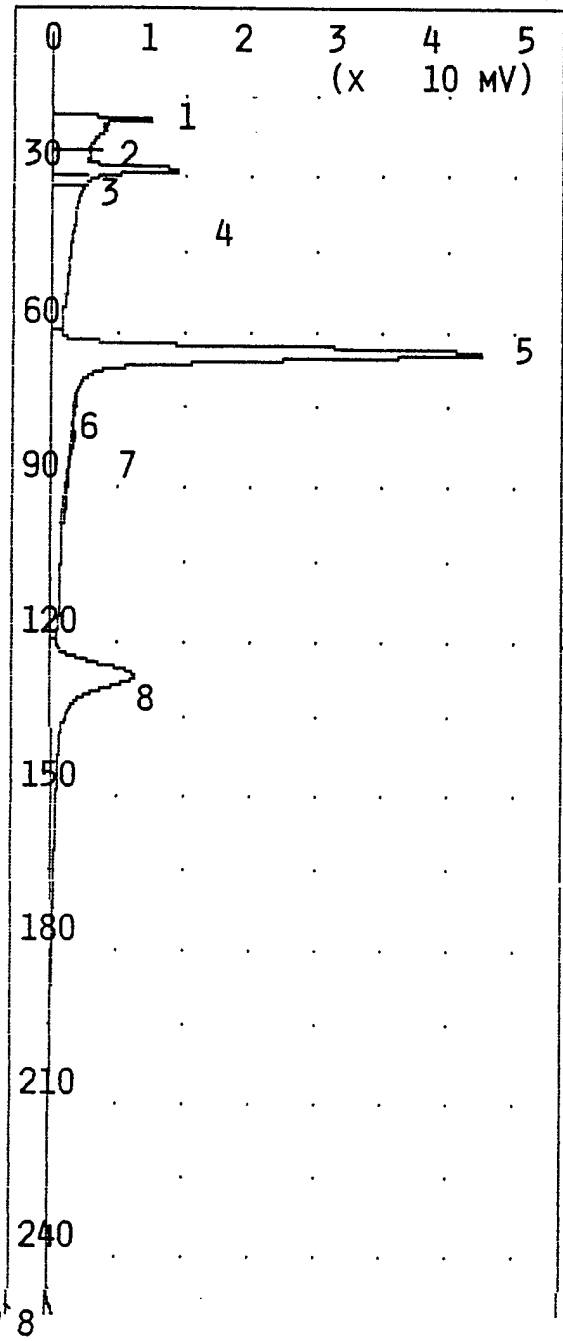
PEAK REPORT

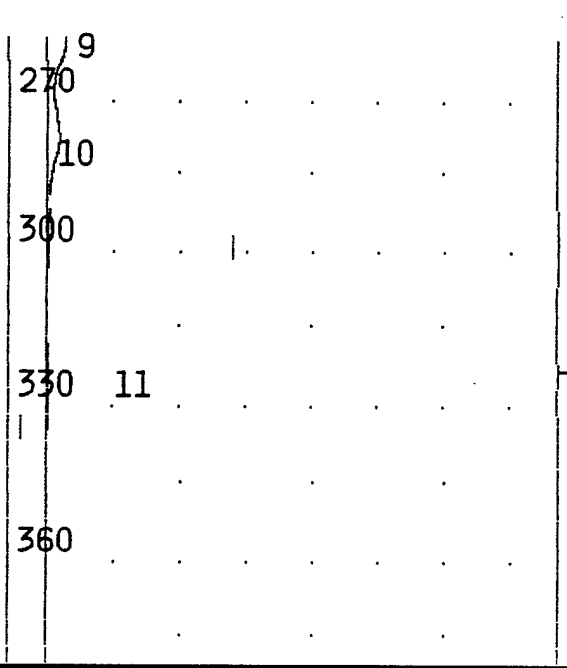
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.192	MVS	14.9
2	UNKNOWN	15.09	MVS	16.5
3	UNKNOWN	41.78	MVS	18.2
4	UNKNOWN	152.7	MVS	26.3
5	UNKNOWN	0.176	MVS	35.8
6	UNKNOWN	2.281	MVS	40.8
7	UNKNOWN	0.937	MVS	64.4
8	UNKNOWN	1.976	MVS	73.6
9	TOLUENE	3.103	PPB	117.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-001MWA 9.0-10.0 20G

ANALYSIS #2 10S+ GC FUNCTION ANALYSIS REPORT





TIME PRINTED: AUG 4,95 13:08
SAMPLE TIME: AUG 4,95 13:01

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	420.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	15.13	MVS	16.8
2	UNKNOWN	28.42	MVS	19.0
3	UNKNOWN	8.660	MVS	24.4
4	UNKNOWN	101.7	MVS	26.8
5	UNKNOWN	240.4	MVS	61.9
6	UNKNOWN	0.463	MVS	70.8
7	UNKNOWN	2.689	MVS	78.6
8	UNKNOWN	87.84	MVS	124.4
9	UNKNOWN	27.15	MVS	255.2
10	UNKNOWN	30.69	MVS	274.1
11	UNKNOWN	11.55	MVS	324.0

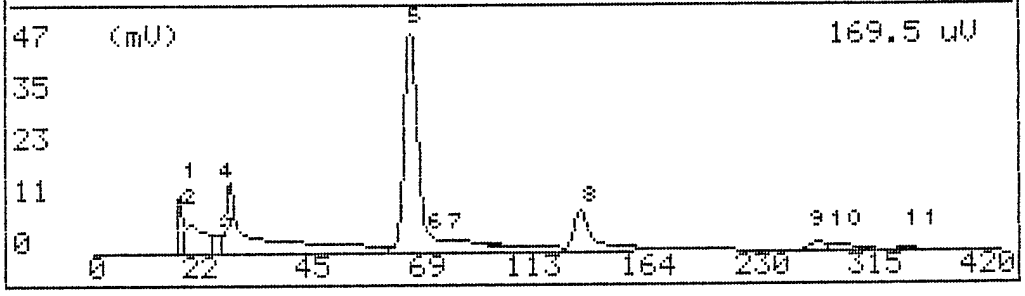
NOTES

JOE BYRD, JR.
MINNEAPOLIS AGB
100 PPB BTEX

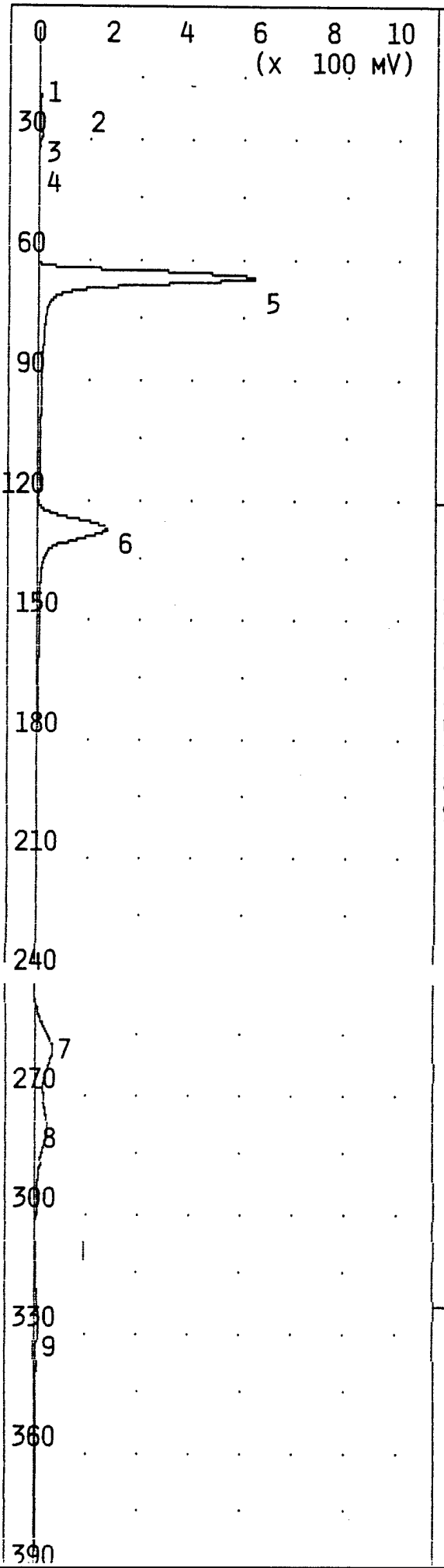
G.C. Ready 10S+ GC Function Aug 4,95 13:15
-- Analysis No 2 -- Run at - Aug 4,95 13:01 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	8.660 mVS	-No-	24.4 sec
4	Unknown	101.7 mVS	-No-	26.8 sec
5	benzene	100.0 ppb	-No-	61.9 sec
6	Unknown	0.463 mVS	-No-	70.8 sec
7	Unknown	2.689 mVS	-No-	78.6 sec
8	toluene	100.0 ppb	-No-	124.4 sec
9	ethylbenzene	100.0 ppb	-No-	255.2 sec
10	m,p-xylene	200.0 ppb	-No-	274.1 sec
11	o-xylene	100.0 ppb	-No-	324.0 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [425 sec]



ANALYSIS #3 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 4,95 13:24
SAMPLE TIME: AUG 4,95 13:17

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	420.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	9.362	MVS	16.9
2	UNKNOWN	24.09	MVS	19.1
3	UNKNOWN	7.999	MVS	24.4
4	UNKNOWN	84.16	MVS	26.9
5	BENZENE	1.216	PPM	62.6
6	TOLUENE	1.723	PPM	124.8
7	ETHYLBENZENE	2.343	PPM	256.0
8	M,P-XYLENE	4.163	PPM	275.2
9	O-XYLENE	2.221	PPM	325.8

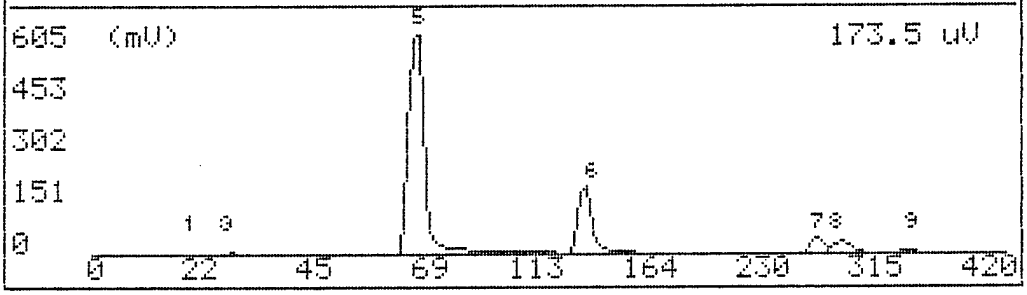
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANB
1 PPM BTEX

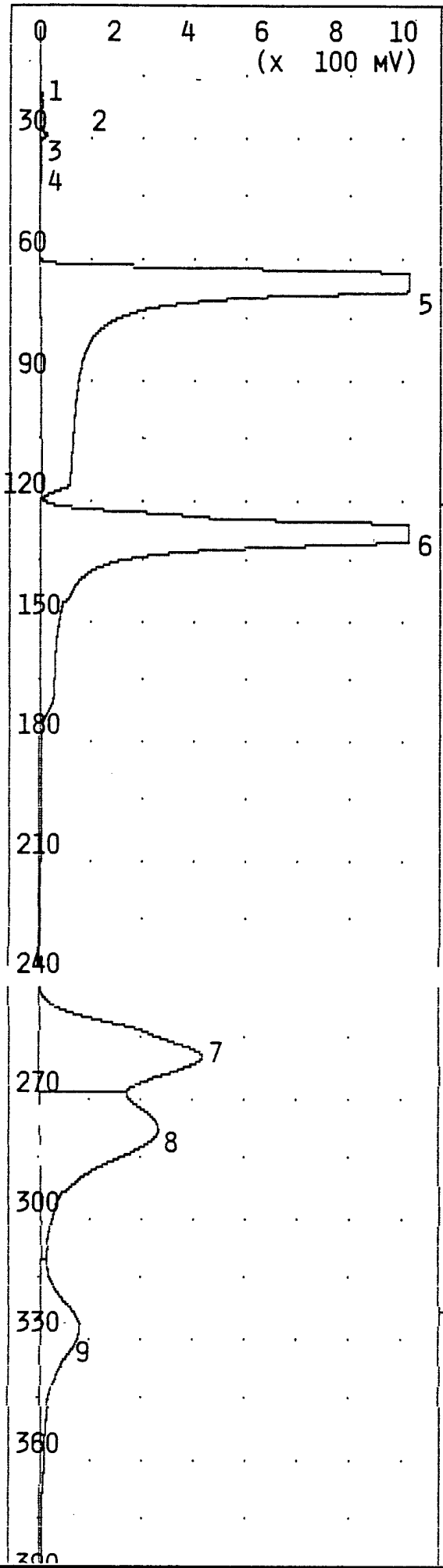
G.C. Ready 10S+ GC Function Aug 4,95 13:29
-- Analysis No 3 -- Run at - Aug 4,95 13:17 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
1	Unknown	9.363 mVS	-No-	16.9 sec
2	Unknown	24.09 mVS	-No-	19.1 sec
3	Unknown	8.002 mVS	-No-	24.4 sec
4	Unknown	84.29 mVS	-No-	26.9 sec
5	benzene	1.000 ppm	-No-	62.6 sec
6	toluene	1.001 ppm	-No-	124.8 sec
7	ethylbenzene	1.000 ppm	-No-	256.0 sec
8	m,p-xylene	2.002 ppm	-No-	275.2 sec
9	o-xylene	1.009 ppm	-No-	325.8 sec

- Detected 9 peaks. [425 sec]



ANALYSIS #4 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 4,95 13:38
SAMPLE TIME: AUG 4,95 13:31

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	420.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	8.513	MVS	17.0
2	UNKNOWN	48.29	MVS	18.7
3	UNKNOWN	0.438	MVS	24.5
4	UNKNOWN	107.4	MVS	27.0
5	BENZENE	6.407	PPM	62.9
6	TOLUENE	8.878	PPM	125.8
7	ETHYLBENZENE	9.895	PPM	257.3
8	M,P-XYLENE	18.96	PPM	275.4
9	O-XYLENE	9.149	PPM	325.6

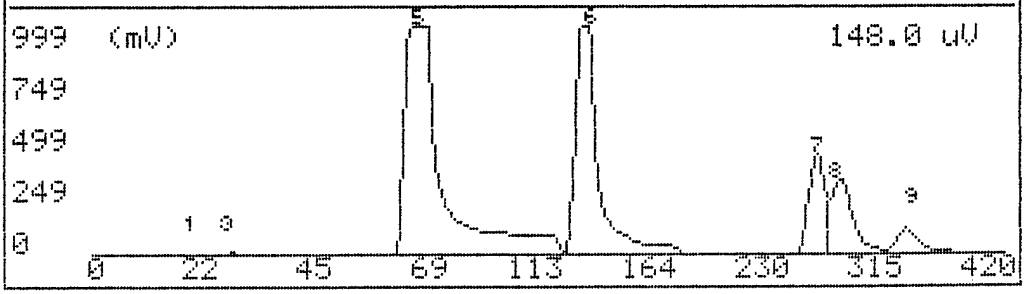
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
10 PPM BTEX

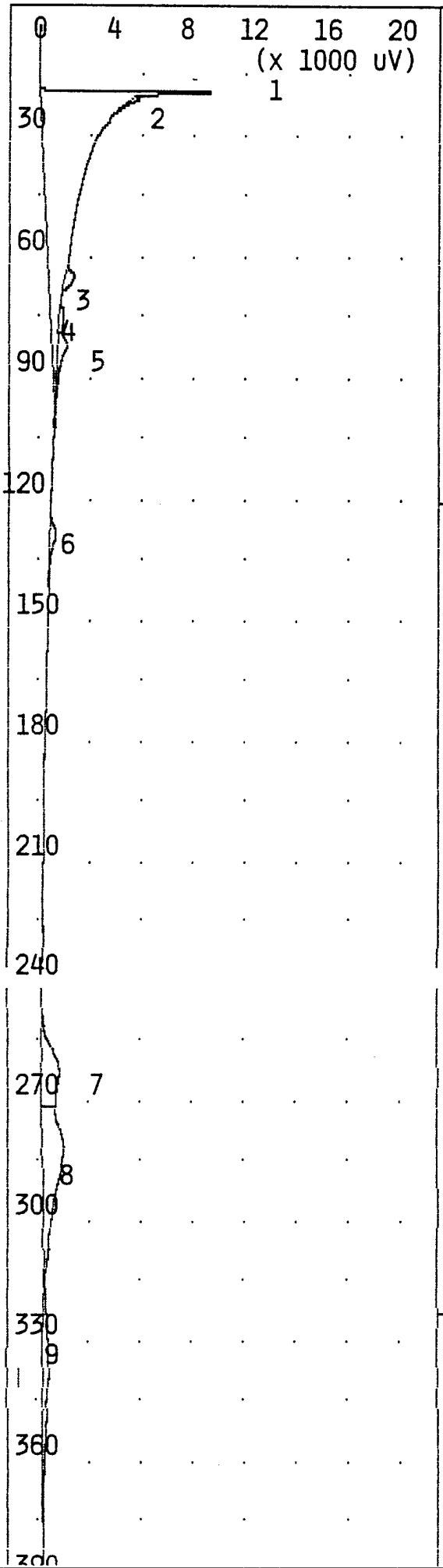
G.C. Ready 10S+ GC Function Aug 4,95 13:43
-- Analysis No 4 -- Run at - Aug 4,95 13:31 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
1	Unknown	8.513 mVS	-No-	17.0 sec
2	Unknown	48.29 mVS	-No-	18.7 sec
3	Unknown	0.438 mVS	-No-	24.5 sec
4	Unknown	107.4 mVS	-No-	27.0 sec
5	benzene	10.00 ppm	-No-	62.9 sec
6	toluene	10.00 ppm	-No-	125.8 sec
7	ethylbenzene	10.00 ppm	-No-	257.3 sec
8	m,p-xylene	20.00 ppm	-No-	275.4 sec
9	o-xylene	10.03 ppm	-No-	325.6 sec

- Detected 9 peaks. [425 sec]



ANALYSIS #7 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 4,95 14:46
SAMPLE TIME: AUG 4,95 14:39

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	420.0	SEC

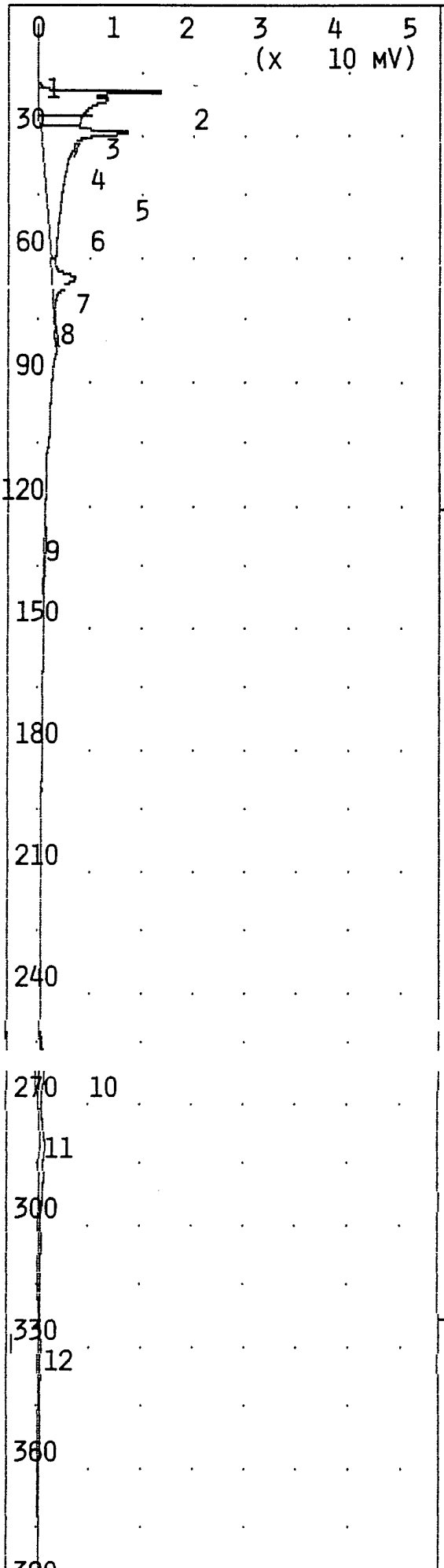
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	147.7	MVS	17.0
2	UNKNOWN	0.558	MVS	18.8
3	BENZENE	0.780	PPB	63.1
4	UNKNOWN	1.315	MVS	71.6
5	UNKNOWN	3.290	MVS	79.8
6	TOLUENE	2.558	PPB	126.2
7	ETHYLBENZENE	48.73	PPB	261.0
8	M,P-XYLENE	193.5	PPB	280.0
9	O-XYLENE	90.56	PPB	332.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #8 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 4,95	14:57	
SAMPLE TIME: AUG 4,95	14:50	
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	420.0	SEC

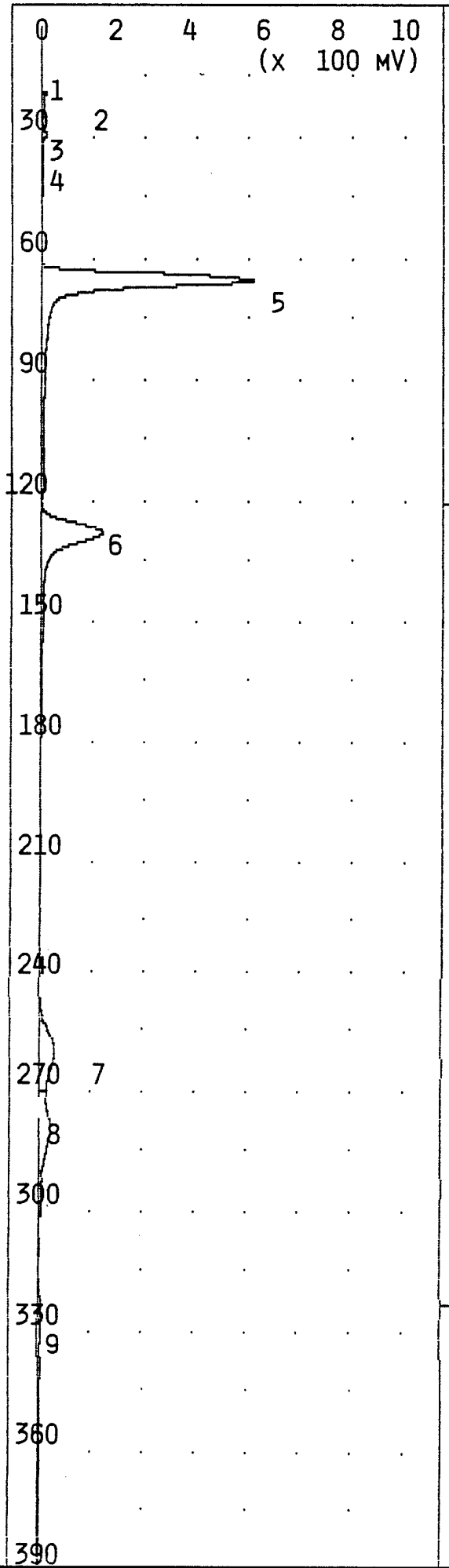
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.687	MVS	15.6
2	UNKNOWN	19.25	MVS	17.1
3	UNKNOWN	52.35	MVS	19.2
4	UNKNOWN	0.114	MVS	24.6
5	UNKNOWN	92.28	MVS	27.2
6	UNKNOWN	0.178	MVS	31.0
7	BENZENE	5.645	PPB	63.0
8	UNKNOWN	0.386	MVS	71.3
9	TOLUENE	1.861	PPB	126.5
10	ETHYLBENZENE	28.60	PPB	260.0
11	M,P-XYLENE	110.5	PPB	279.7
12	O-XYLENE	53.58	PPB	330.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANG
651-001MWA RESHOT
14.0-15.0 14G

ANALYSIS #9 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 4,95 15:11
SAMPLE TIME: AUG 4,95 15:04

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	420.0	SEC

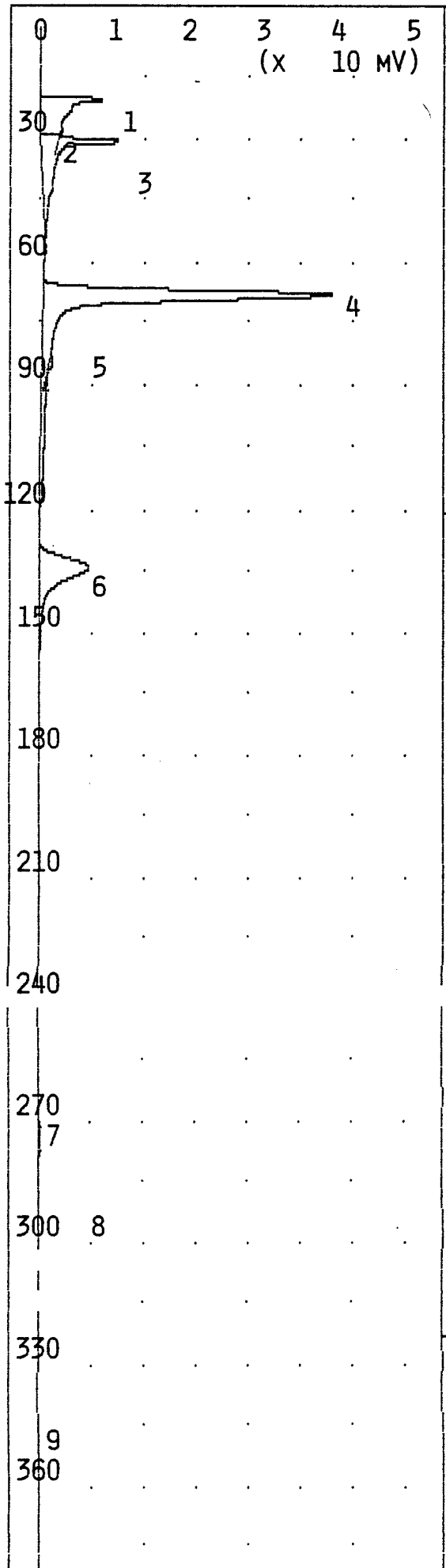
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	18.16	MVS	17.2
2	UNKNOWN	43.29	MVS	18.9
3	UNKNOWN	11.93	MVS	24.7
4	UNKNOWN	127.7	MVS	27.2
5	BENZENE	976.8	PPB	63.2
6	TOLUENE	875.5	PPB	125.7
7	ETHYLBENZENE	887.6	PPB	257.8
8	M,P-XYLENE	1.789	PPM	277.3
9	O-XYLENE	890.6	PPB	328.5

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
1 PPM BTEX

ANALYSIS #1 10S+ GC FUNCTION ANALYSIS REPORT



LH

TIME PRINTED: AUG 5,95 07:50
SAMPLE TIME: AUG 5,95 07:43

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	29	C
MAX GAIN	1000	
ANALYSIS TIME	420.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	44.77	MVS	18.0
2	UNKNOWN	0.360	MVS	26.0
3	UNKNOWN	52.63	MVS	28.6
4	UNKNOWN	160.5	MVS	66.0
5	UNKNOWN	0.714	MVS	82.6
6	UNKNOWN	57.17	MVS	131.7
7	UNKNOWN	20.53	MVS	272.0
8	UNKNOWN	24.21	MVS	292.2
9	UNKNOWN	10.54	MVS	345.3

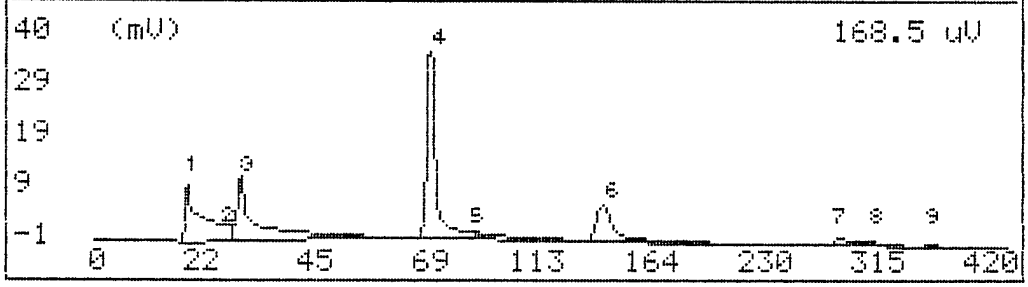
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

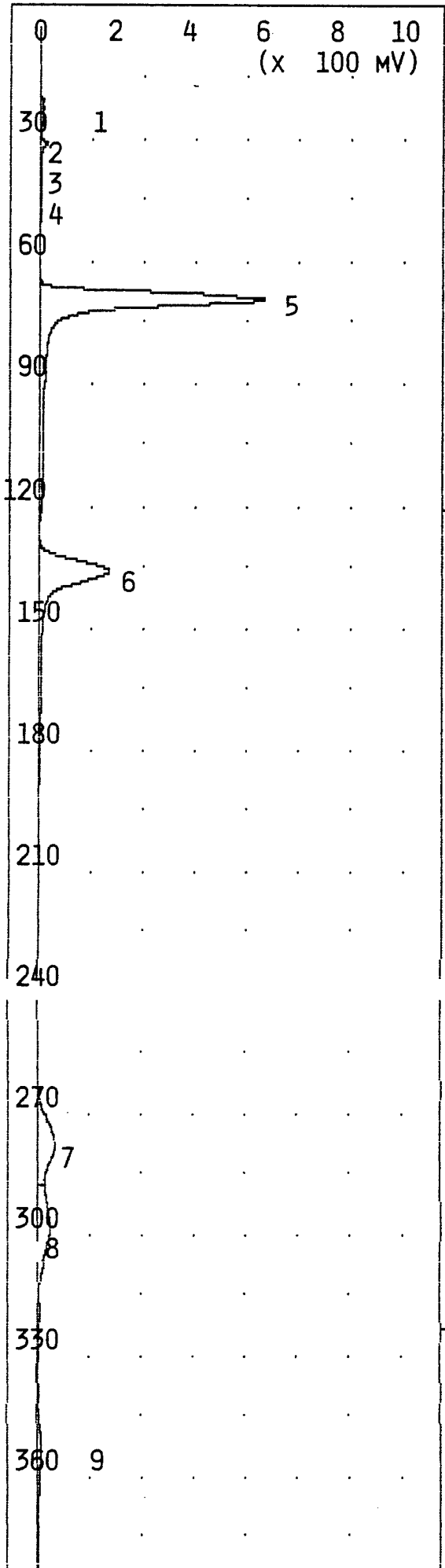
G.C. Ready 10S+ GC Function Aug 5,95 07:57
-- Analysis No 1 -- Run at - Aug 5,95 07:43 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
1	Unknown	44.77 mVS	-No-	18.0 sec
2	Unknown	0.360 mVS	-No-	26.0 sec
3	Unknown	52.63 mVS	-No-	28.6 sec
4	benzene	100.0 ppb	-No-	86.0 sec
5	Unknown	0.714 mVS	-No-	82.6 sec
6	toluene	100.0 ppb	-No-	131.7 sec
7	ethylbenzene	100.5 ppb	-No-	272.0 sec
8	m,p-xylene	205.2 ppb	-No-	292.2 sec
9	o-xylene	118.8 ppb	-No-	345.3 sec

- Detected 9 peaks. [425 sec]



ANALYSIS #4 10S+ GC FUNCTION ANALYSIS REPORT



LH

TIME PRINTED: AUG 5,95 08:25
SAMPLE TIME: AUG 5,95 08:18

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	32	C
MAX GAIN	1000	
ANALYSIS TIME	420.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	16.25	MVS	18.2
2	UNKNOWN	66.48	MVS	20.0
3	UNKNOWN	0.542	MVS	26.2
4	UNKNOWN	156.9	MVS	28.9
5	BENZENE	2.013	PPM	67.3
6	TOLUENE	2.822	PPM	133.4
7	ETHYLBENZENE	3.283	PPM	274.9
8	M,P-XYLENE	5.415	PPM	295.7
9	O-XYLENE	2.100	PPM	351.0

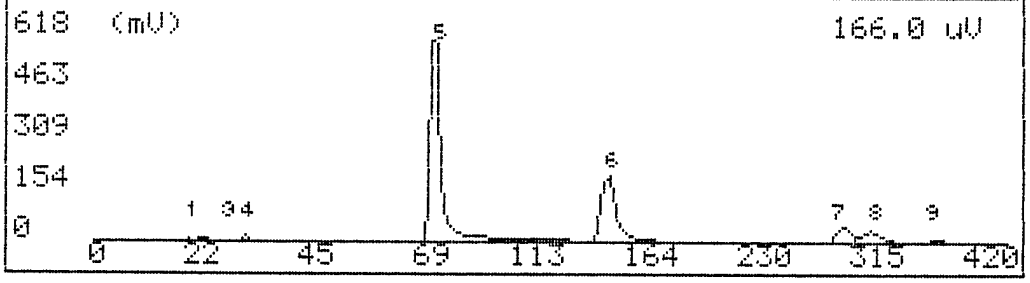
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
1 PPM BTEX

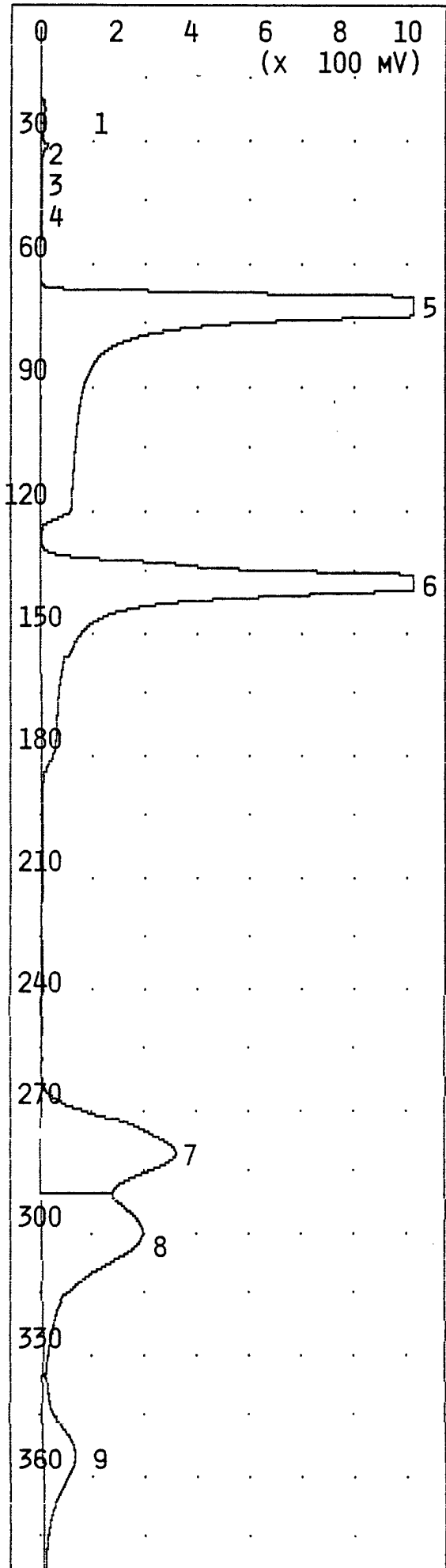
G.C. Ready 10S+ GC Function Aug 5,95 08:29
-- Analysis No 4 -- Run at - Aug 5,95 08:18 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
1	Unknown	16.25 mVS	-No-	18.2 sec
2	Unknown	66.48 mVS	-No-	20.0 sec
3	Unknown	0.542 mVS	-No-	26.2 sec
4	Unknown	156.9 mVS	-No-	28.9 sec
5	benzene	1.000 ppm	-No-	67.3 sec
6	toluene	1.000 ppm	-No-	133.4 sec
7	ethylbenzene	1.000 ppm	-No-	274.9 sec
8	m,p-xylene	2.001 ppm	-No-	295.7 sec
9	o-xylene	1.011 ppm	-No-	351.0 sec

- Detected 9 peaks. [425 sec]



ANALYSIS #5 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 5,95 08:39
SAMPLE TIME: AUG 5,95 08:31

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	420.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	16.17	MVS	18.2
2	UNKNOWN	76.80	MVS	20.1
3	UNKNOWN	0.526	MVS	26.4
4	UNKNOWN	146.6	MVS	29.1
5	BENZENE	5.386	PPM	68.5
6	TOLUENE	7.621	PPM	135.3
7	ETHYLBENZENE	8.192	PPM	278.1
8	M,P-XYLENE	16.23	PPM	297.6
9	O-XYLENE	8.605	PPM	352.6

NOTES

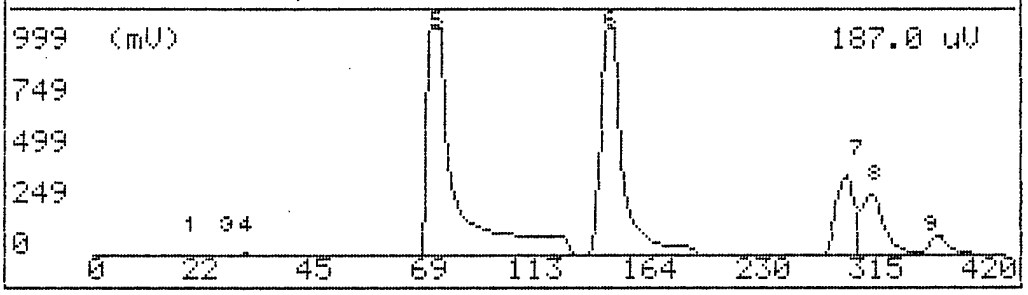
JOE BYRD, JR.
MINNEAPOLIS ANGB
10 PPM BTEX

G.C. Ready 10S+ GC Function Aug 5,95 08:43

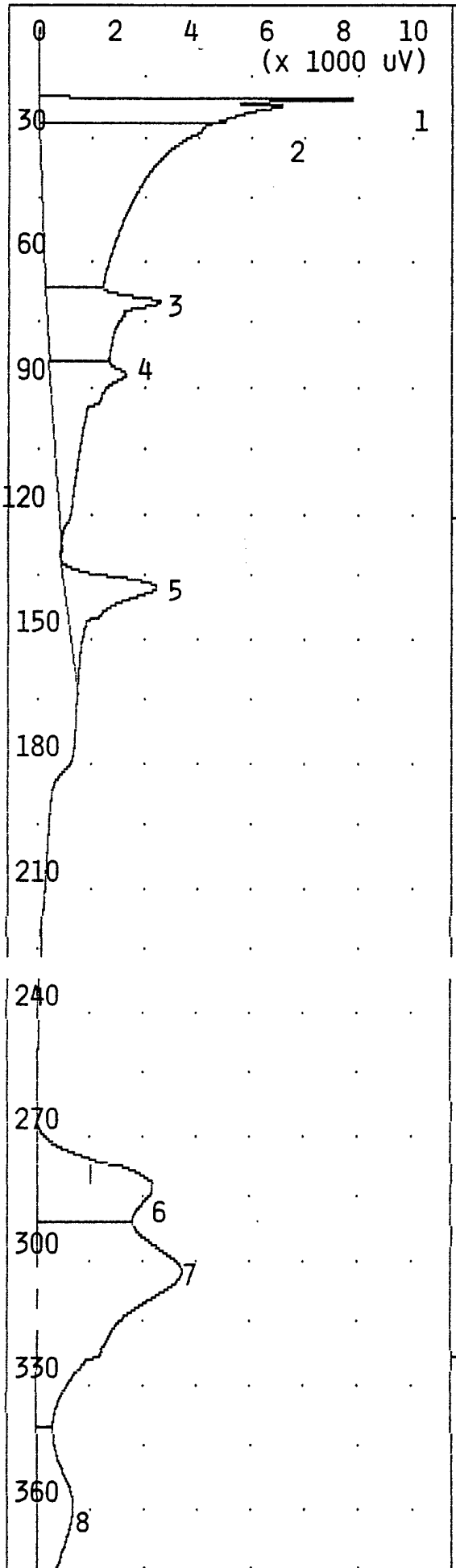
-- Analysis No 5 -- Run at - Aug 5,95 08:31 -

Pk No	Name	Conc/Area		Alarm	Ret.Time
1	Unknown	16.17	mVS	-No-	18.2 sec
2	Unknown	76.80	mVS	-No-	20.1 sec
3	Unknown	0.526	mVS	-No-	26.4 sec
4	Unknown	146.6	mVS	-No-	29.1 sec
5	benzene	10.00	ppm	-No-	68.5 sec
6	toluene	1.000	ppm	-No-	135.3 sec
7	ethylbenzene	10.00	ppm	-No-	278.1 sec
8	m,p-xylene	20.00	ppm	-No-	297.6 sec
9	o-xylene	10.04	ppm	-No-	352.6 sec

- Detected 9 peaks. [425 sec]



ANALYSIS #10 10S+ GC FUNCTION ANALYSIS REPORT



LH

TIME PRINTED: AUG 5,95 09:39
SAMPLE TIME: AUG 5,95 09:32

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	420.0	SEC

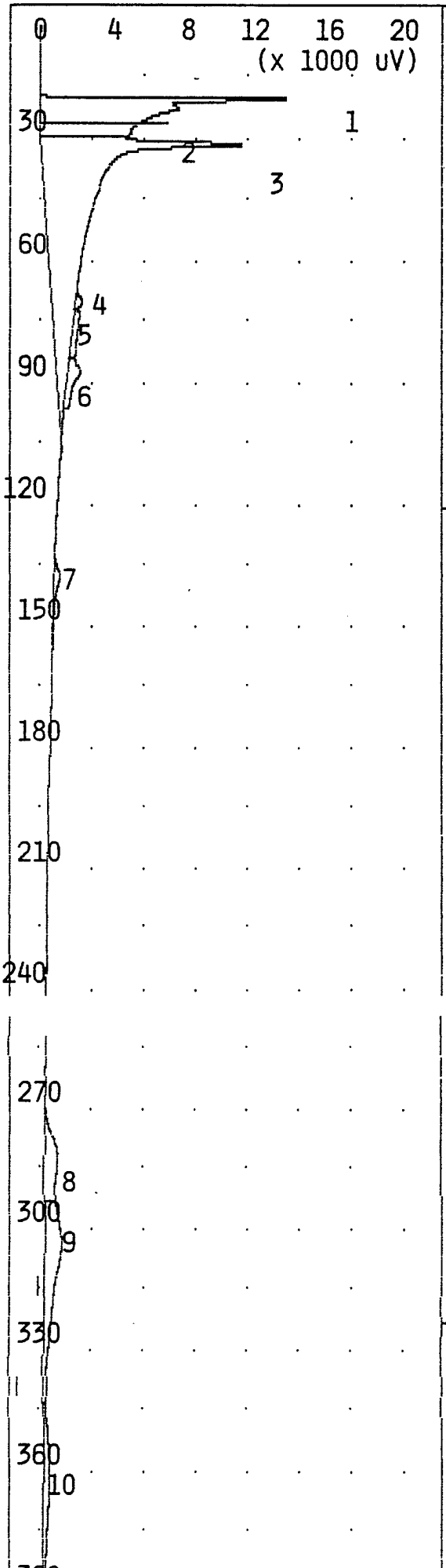
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	11.45	MVS	18.4
2	UNKNOWN	141.8	MVS	20.2
3	BENZENE	21.86	PPB	67.8
4	UNKNOWN	34.14	MVS	84.9
5	TOLUENE	40.12	PPB	135.6
6	ETHYLBENZENE	136.8	PPB	280.2
7	M,P-XYLENE	439.1	PPB	300.2
8	O-XYLENE	203.6	PPB	357.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
KLANB RIA

ANALYSIS #11 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 5,95 10:09
SAMPLE TIME: AUG 5,95 10:02

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	420.0	SEC

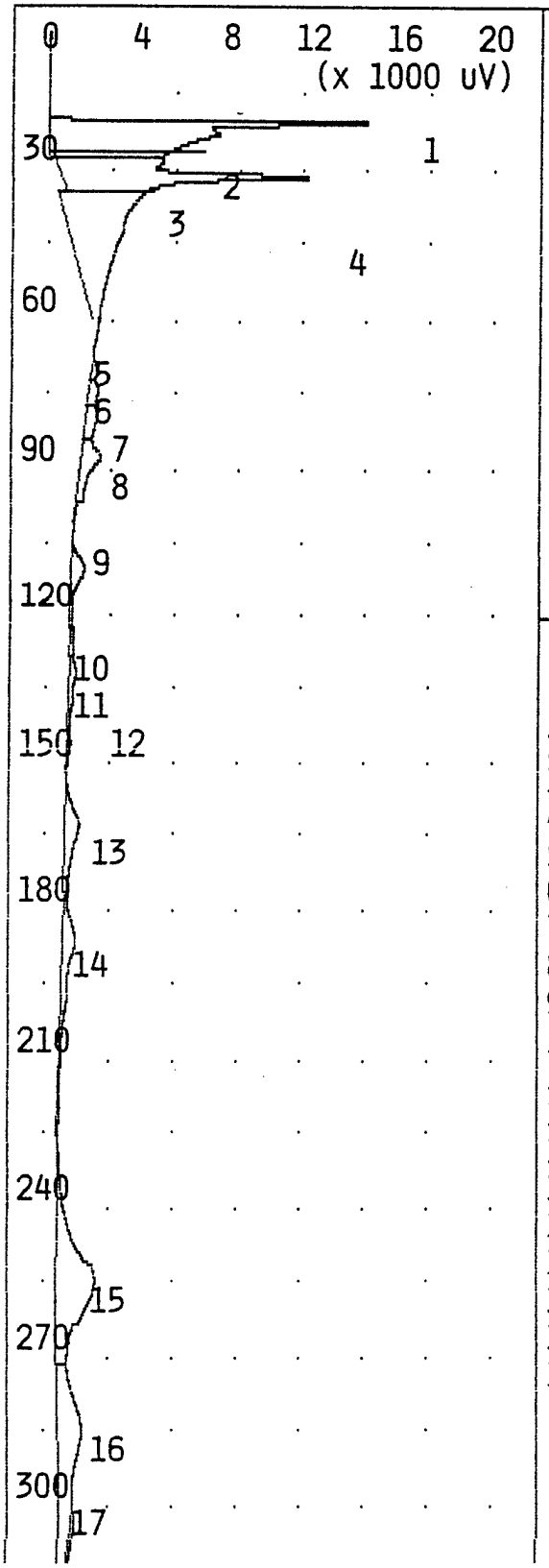
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	19.15	MVS	18.4
2	UNKNOWN	50.00	MVS	20.7
3	UNKNOWN	143.8	MVS	29.4
4	BENZENE	0.590	PPB	67.7
5	UNKNOWN	3.280	MVS	71.7
6	UNKNOWN	4.780	MVS	85.4
7	TOLUENE	3.707	PPB	135.8
8	ETHYLBENZENE	52.40	PPB	281.8
9	M,P-XYLENE	184.0	PPB	301.3
10	O-XYLENE	90.13	PPB	358.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-002MW 2.0- 3.0 20G

ANALYSIS #12 10S+ GC FUNCTION ANALYSIS REPORT



LR

TIME PRINTED: AUG 5,95 10:20
SAMPLE TIME: AUG 5,95 10:13

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	420.0	SEC

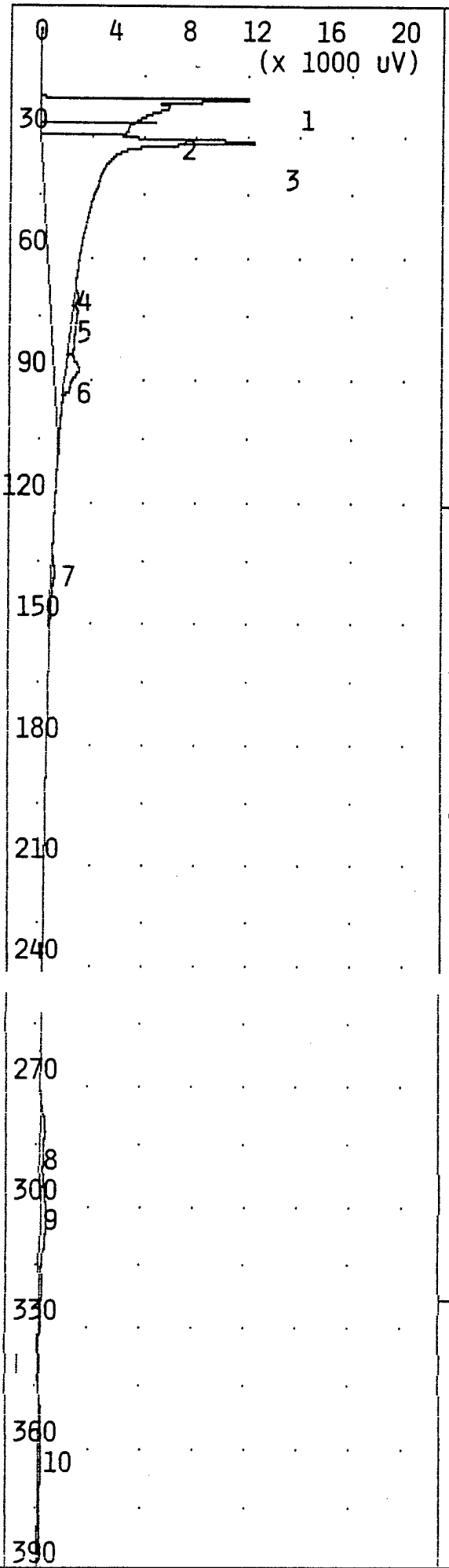
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	19.81	MVS	18.4
2	UNKNOWN	38.05	MVS	20.8
3	UNKNOWN	8.949	MVS	26.7
4	UNKNOWN	67.78	MVS	29.4
5	BENZENE	0.485	PPB	68.1
6	UNKNOWN	1.649	MVS	71.6
7	UNKNOWN	2.835	MVS	77.0
8	UNKNOWN	5.658	MVS	85.3
9	UNKNOWN	3.474	MVS	107.3
10	UNKNOWN	0.788	MVS	122.8
11	TOLUENE	4.446	PPB	129.7
12	UNKNOWN	0.628	MVS	143.3
13	UNKNOWN	6.843	MVS	161.0
14	UNKNOWN	8.481	MVS	184.0
15	UNKNOWN	29.50	MVS	252.2
16	ETHYLBENZENE	118.7	PPB	282.1
17	M,P-XYLENE	9.885	PPB	301.3
18	O-XYLENE	123.0	PPB	353.3
19	UNKNOWN	9.054	MVS	378.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-002MW 4.0- 5.0 14G

ANALYSIS #13 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 5,95	10:35	
SAMPLE TIME: AUG 5,95	10:28	
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	420.0	SEC

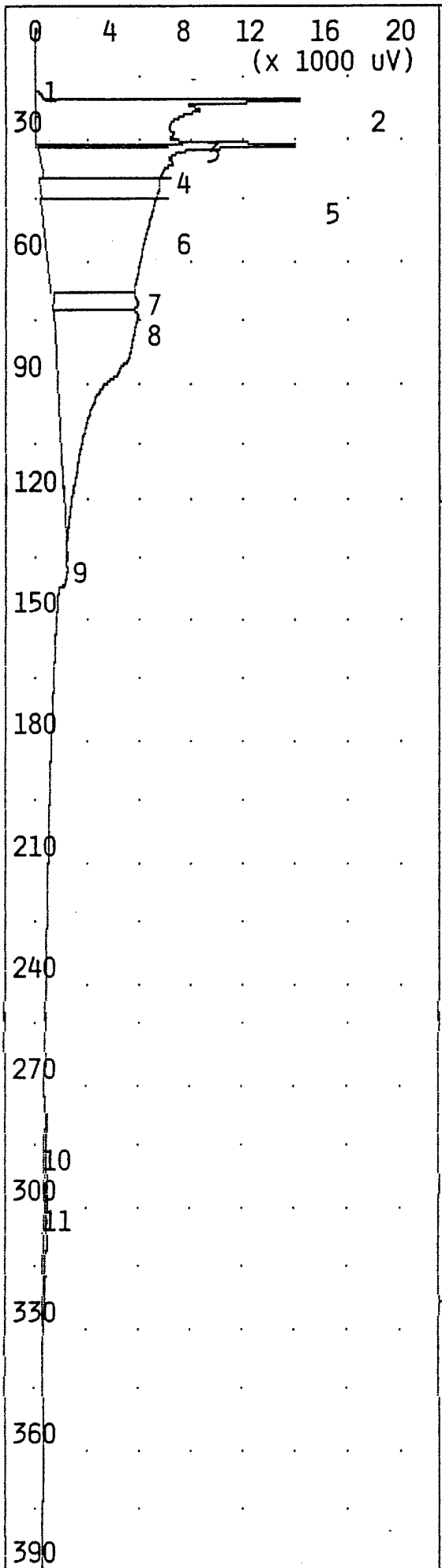
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	16.33	MVS	18.4
2	UNKNOWN	48.15	MVS	20.4
3	UNKNOWN	147.6	MVS	29.4
4	BENZENE	0.375	PPB	68.0
5	UNKNOWN	3.126	MVS	71.0
6	UNKNOWN	4.215	MVS	85.4
7	TOLUENE	1.853	PPB	134.8
8	ETHYLBENZENE	17.62	PPB	281.0
9	M,P-XYLENE	50.81	PPB	300.5
10	O-XYLENE	33.67	PPB	357.3

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-002MW ~~4.0~~ ~~5.0~~ ~~14G~~
9.0 10.0 17g

ANALYSIS #14 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 5,95 10:46
SAMPLE TIME: AUG 5,95 10:39

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	420.0	SEC

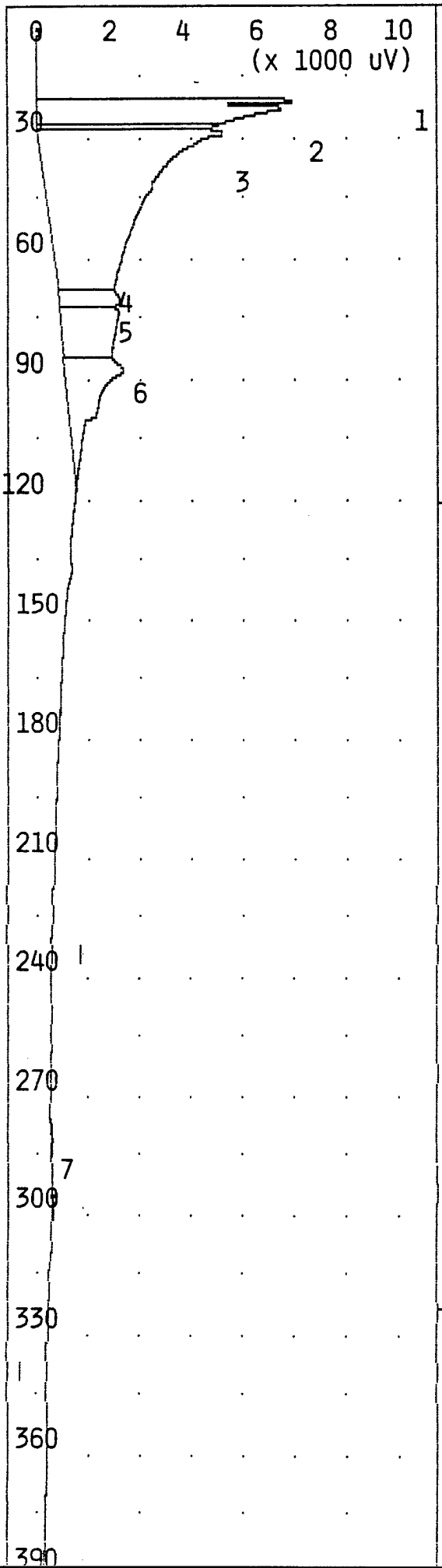
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.460	MVS	16.9
2	UNKNOWN	20.59	MVS	18.4
3	UNKNOWN	46.39	MVS	21.0
4	UNKNOWN	17.20	MVS	26.6
5	UNKNOWN	46.28	MVS	29.4
6	UNKNOWN	186.2	MVS	33.8
7	BENZENE	12.03	PPB	68.1
8	UNKNOWN	110.5	MVS	71.2
9	TOLUENE	1.776	PPB	135.2
10	ETHYLBENZENE	10.88	PPB	280.5
11	M,P-XYLENE	23.15	PPB	301.3

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-002MW 14.0-15.0 20G

ANALYSIS #15 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 5,95 10:56
SAMPLE TIME: AUG 5,95 10:49

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	420.0	SEC

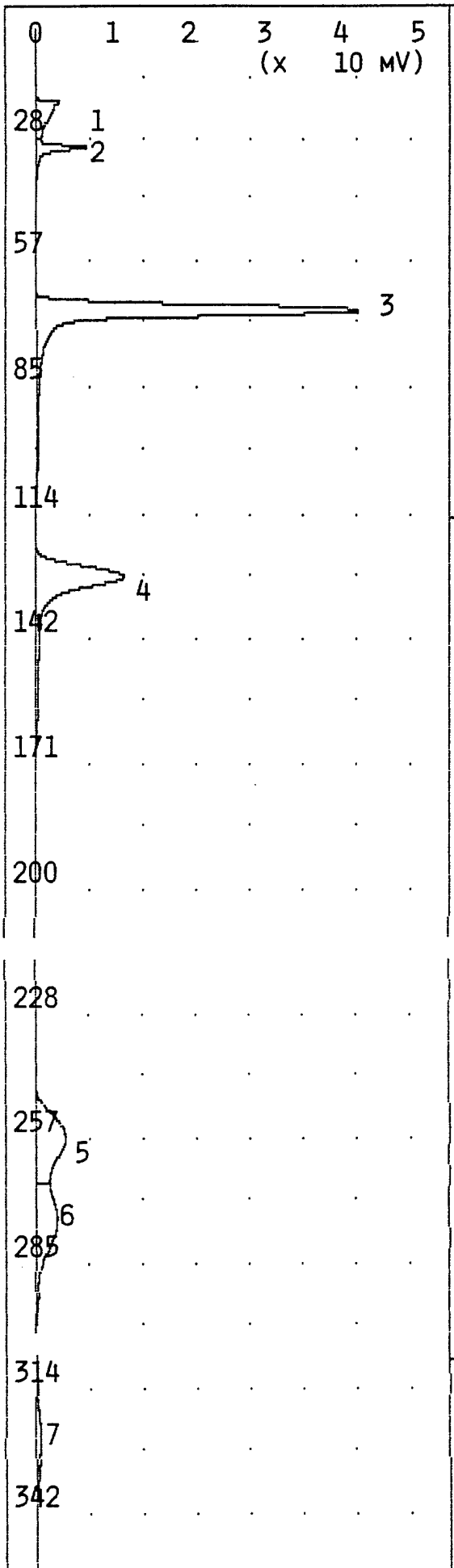
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	11.60 MVS	18.4
2	UNKNOWN	36.56 MVS	20.4
3	UNKNOWN	115.7 MVS	26.7
4	BENZENE	4.255 PPB	68.0
5	UNKNOWN	18.41 MVS	71.2
6	UNKNOWN	21.42 MVS	85.6
7	ETHYLBENZENE	2.057 PPB	280.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #2 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 10:29
SAMPLE TIME: AUG 8,95 10:22

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	31	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	17.60	MVS	18.1
2	UNKNOWN	12.75	MVS	28.8
3	UNKNOWN	154.9	MVS	66.6
4	UNKNOWN	93.96	MVS	126.5
5	UNKNOWN	59.69	MVS	254.9
6	UNKNOWN	54.35	MVS	273.3
7	UNKNOWN	24.41	MVS	323.2

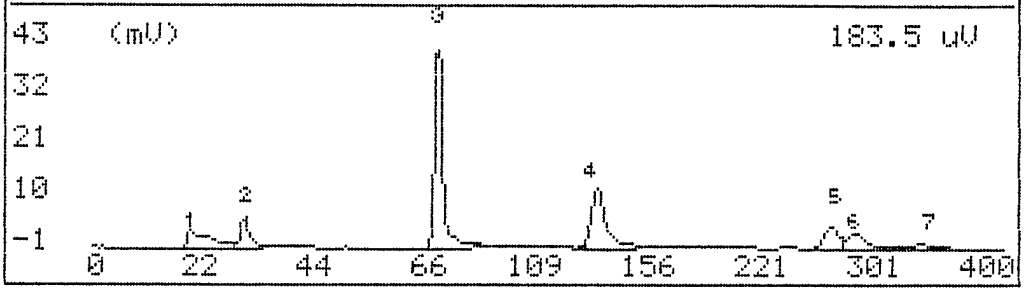
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

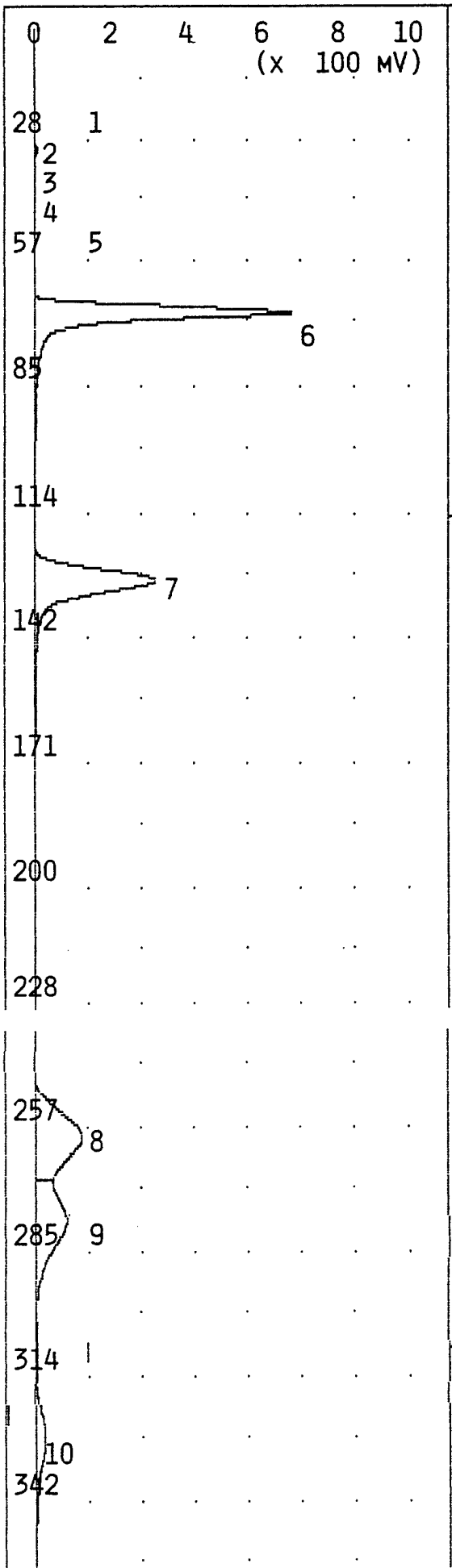
G.C. Ready 10S+ GC Function Aug 8,95 10:34
-- Analysis No 2 -- Run at - Aug 8,95 10:22 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
1	Unknown	17.60 mVS	-No-	18.1 sec
2	Unknown	12.75 mVS	-No-	28.8 sec
3	benzene	100.0 ppb	-No-	66.6 sec
4	toluene	100.0 ppb	-No-	126.5 sec
5	ethylbenzene	100.0 ppb	-No-	254.9 sec
6	m,p-xylene	200.2 ppb	-No-	273.3 sec
7	o-xylene	101.5 ppb	-No-	323.2 sec

- Detected 7 peaks. [405 sec]



ANALYSIS #3 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 10:43
SAMPLE TIME: AUG 8,95 10:36

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	32	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	5.272	MVS	18.2
2	UNKNOWN	16.32	MVS	20.5
3	UNKNOWN	4.490	MVS	26.2
4	UNKNOWN	30.25	MVS	29.0
5	UNKNOWN	0.256	MVS	47.8
6	BENZENE	1.774	PPM	67.4
7	TOLUENE	2.477	PPM	127.7
8	ETHYLBENZENE	2.846	PPM	257.3
9	M,P-XYLENE	4.893	PPM	276.2
10	O-XYLENE	1.896	PPM	325.8

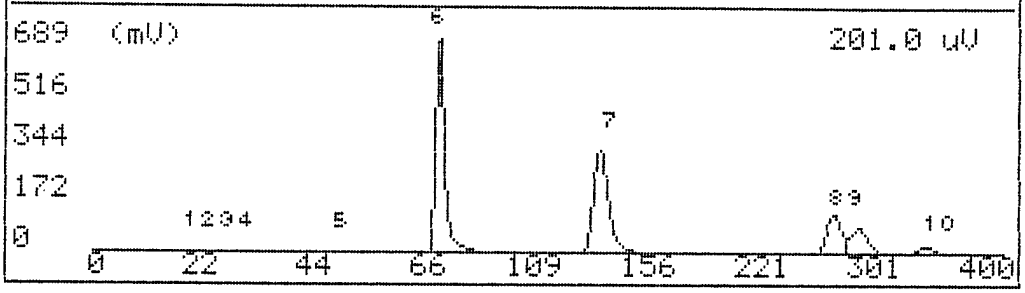
NOTES

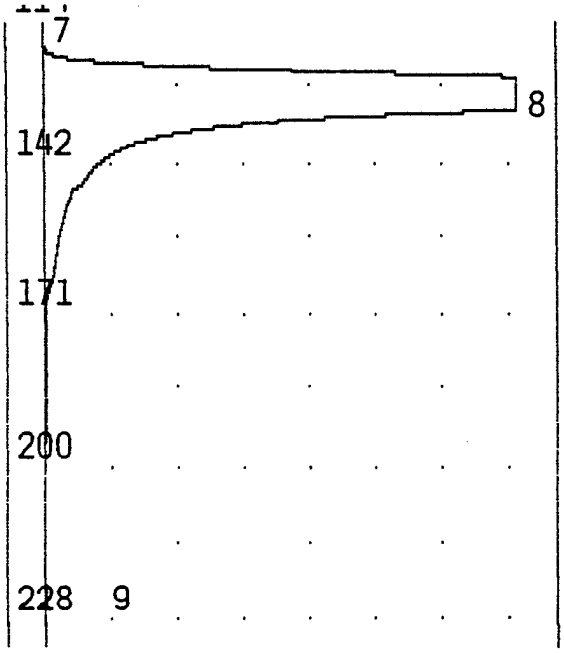
JOE BYRD, JR.
MINNEAPOLIS ANB
1 PPM BTEX

G.C. Ready 10S+ GC Function Aug 8,95 10:47
-- Analysis No 3 -- Run at - Aug 8,95 10:36 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
2	Unknown	16.32 mVS	-No-	20.5 sec
3	Unknown	4.490 mVS	-No-	26.2 sec
4	Unknown	30.25 mVS	-No-	29.0 sec
5	Unknown	0.256 mVS	-No-	47.8 sec
6	benzene	1.000 ppm	-No-	67.4 sec
7	toluene	1.000 ppm	-No-	127.7 sec
8	ethylbenzene	1.000 ppm	-No-	257.3 sec
9	m,p-xylene	2.000 ppm	-No-	276.2 sec
10	o-xylene	1.002 ppm	-No-	325.8 sec

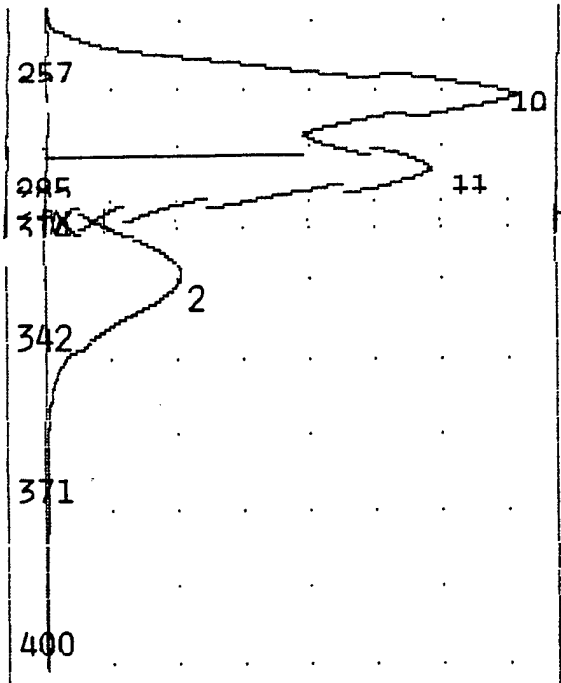
- Detected 10 peaks. Use ↑ ↓ to scroll [405 sec]





Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	4.653 mVS	18.2
2	Unknown	28.89 mVS	20.1
3	Unknown	0.070 mVS	25.8
4	Unknown	49.97 mVS	28.9
5	Unknown	0.878 mVS	48.1
6	Benzene	4.205 ppm	67.4
7	Unknown	3.821 mVS	110.9
8	Toluene	7.076 ppm	127.7
9	Unknown	4.136 mVS	222.2
10	Ethylbenzene	8.253 ppm	256.8
11	M,P-Xylene	20.67 ppm	275.2
12	O-Xylene	11.67 ppm	325.3

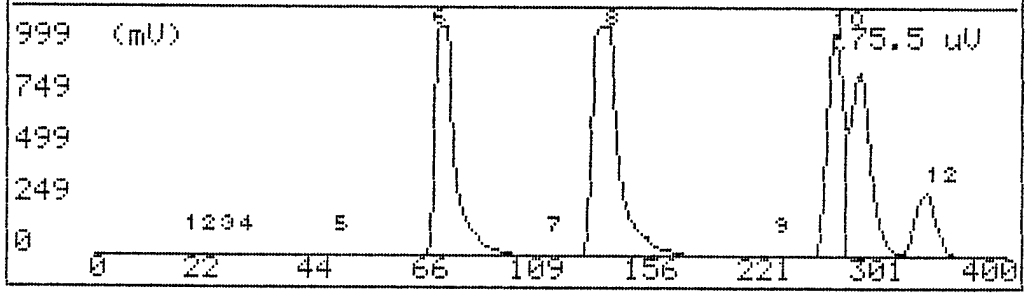


Jae Ryan, Jr. Notes
MINNEAPOLIS AGB
10 PPM BTEX

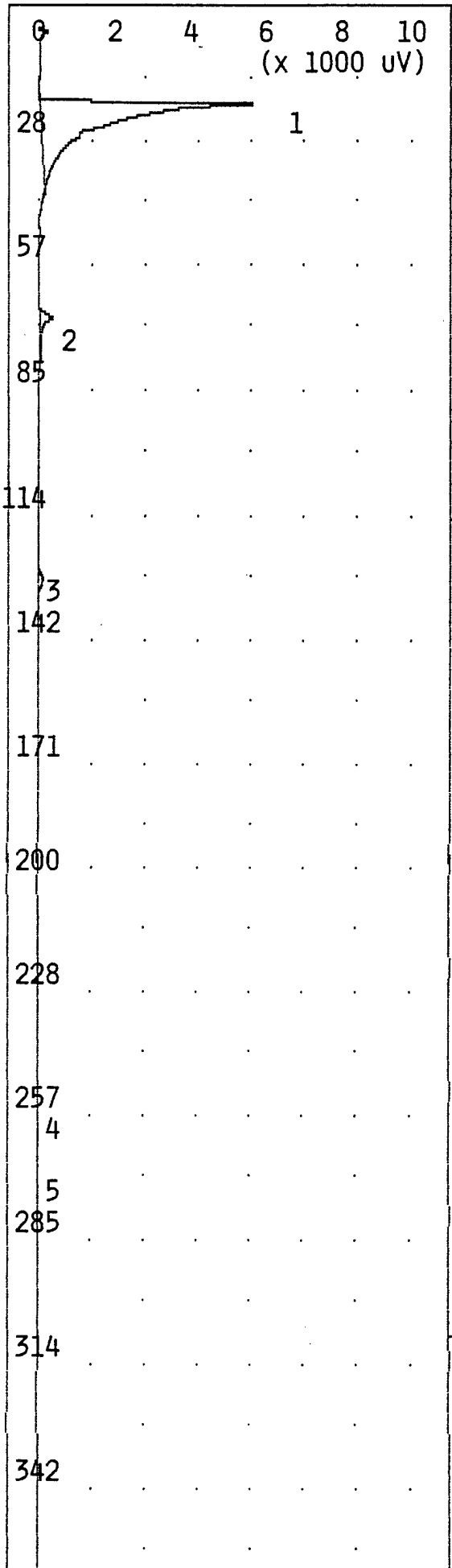
G.C. Ready 10S+ GC Function Aug 8,95 11:04
-- Analysis No 4 -- Run at - Aug 8,95 10:50 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
4	Unknown	49.97 mVS	-No-	28.9 sec
5	Unknown	0.878 mVS	-No-	48.1 sec
6	benzene	10.00 ppm	-No-	67.4 sec
7	Unknown	3.821 mVS	-No-	110.9 sec
8	toluene	10.00 ppm	-No-	127.7 sec
9	Unknown	4.136 mVS	-No-	222.2 sec
10	ethylbenzene	10.00 ppm	-No-	256.8 sec
11	m,p-xylene	20.00 ppm	-No-	275.2 sec
12	o-xylene	10.00 ppm	-No-	325.3 sec

- Detected 12 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #5 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 11:13
SAMPLE TIME: AUG 8,95 11:06

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

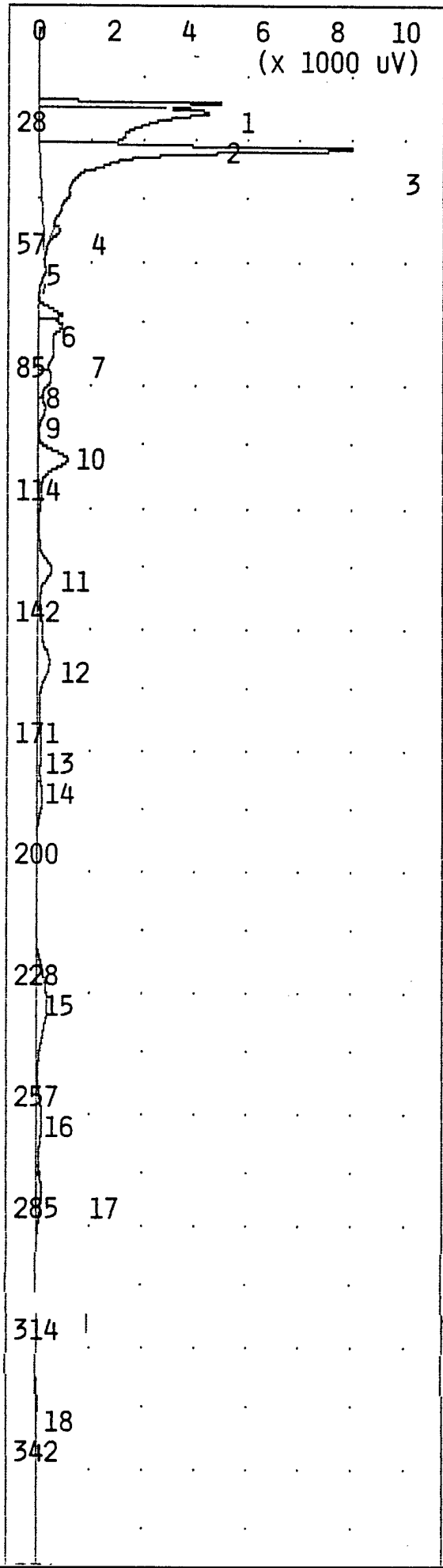
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	26.43	MVS	18.1
2	BENZENE	1.334	PPB	67.3
3	TOLUENE	1.733	PPB	127.0
4	ETHYLBENZENE	4.928	PPB	257.0
5	M,P-XYLENE	4.433	PPB	273.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #6 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 11:22
SAMPLE TIME: AUG 8,95 11:16

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

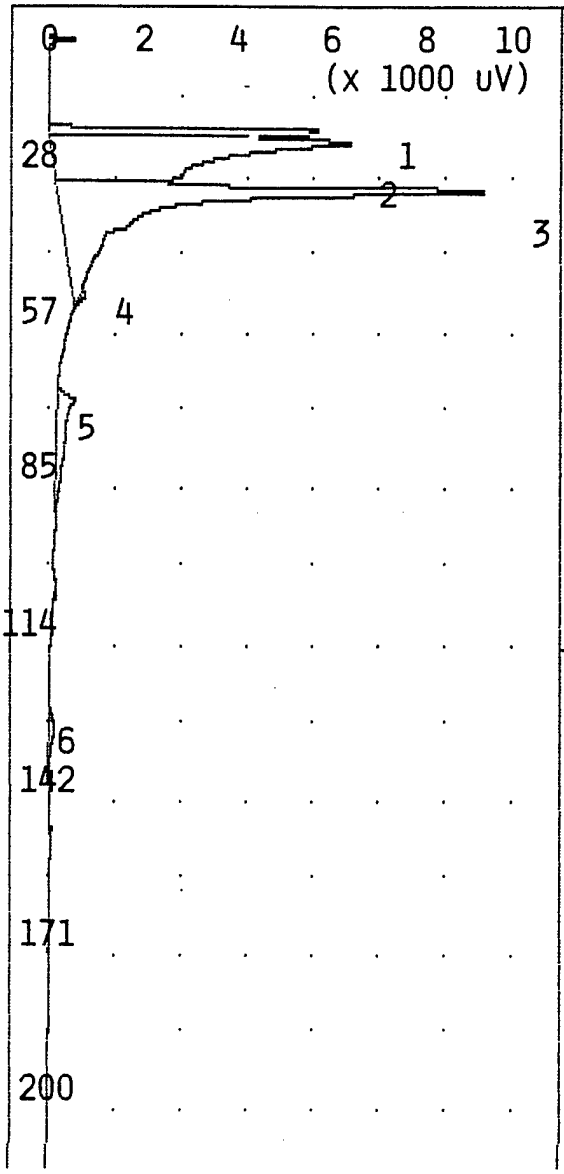
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	6.905	MVS	18.2
2	UNKNOWN	26.37	MVS	20.2
3	UNKNOWN	34.94	MVS	29.0
4	UNKNOWN	0.462	MVS	47.9
5	UNKNOWN	0.162	MVS	57.2
6	BENZENE	1.051	PPB	67.4
7	UNKNOWN	4.821	MVS	70.2
8	UNKNOWN	1.658	MVS	82.6
9	UNKNOWN	0.902	MVS	89.6
10	UNKNOWN	4.956	MVS	101.4
11	TOLUENE	3.347	PPB	126.6
12	UNKNOWN	5.117	MVS	146.2
13	UNKNOWN	1.650	MVS	170.6
14	UNKNOWN	1.733	MVS	180.6
15	UNKNOWN	6.445	MVS	228.8
16	ETHYLBENZENE	5.719	PPB	256.5
17	M,P-XYLENE	10.24	PPB	276.0
18	O-XYLENE	5.101	PPB	324.8

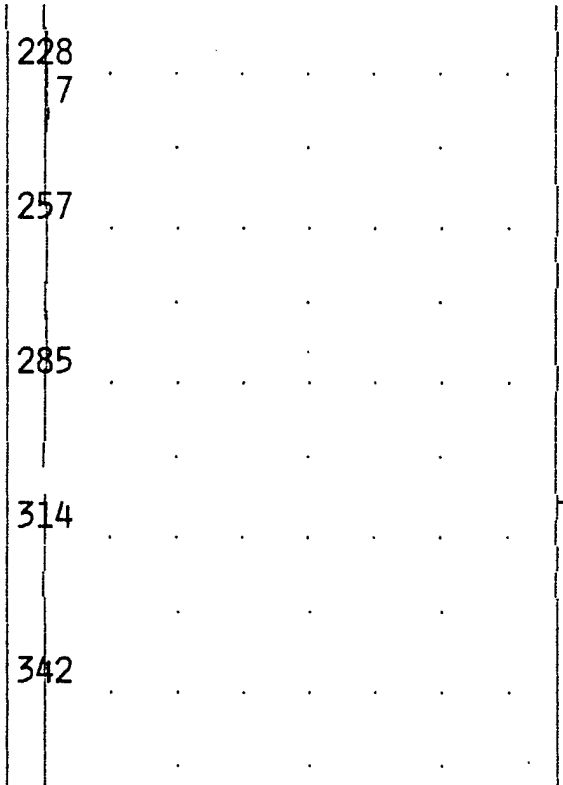
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANB
591-001BH 2.0- 3.0 17G

ANALYSIS #7 10S+ GC FUNCTION ANALYSIS REPORT



LH



TIME PRINTED: AUG 8,95 11:33
SAMPLE TIME: AUG 8,95 11:26

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

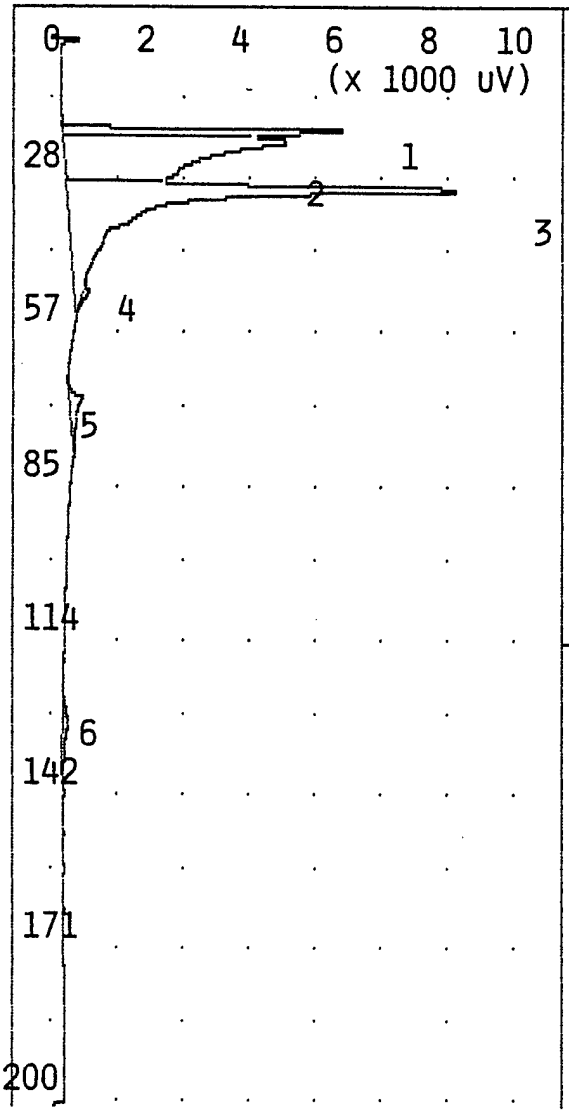
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	8.588	MVS	18.2
2	UNKNOWN	32.90	MVS	20.2
3	UNKNOWN	37.39	MVS	29.1
4	UNKNOWN	0.175	MVS	48.2
5	BENZENE	2.130	PPB	67.4
6	TOLUENE	0.647	PPB	128.0
7	UNKNOWN	0.830	MVS	228.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-001BH 4.0- 5.0 20G

ANALYSIS #8 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 11:42
SAMPLE TIME: AUG 8,95 11:36

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	8.635 MVS	18.2
2	UNKNOWN	26.67 MVS	20.1
3	UNKNOWN	34.53 MVS	29.0
4	UNKNOWN	0.232 MVS	48.2
5	BENZENE	0.983 PPB	67.7
6	TOLUENE	0.604 PPB	127.6

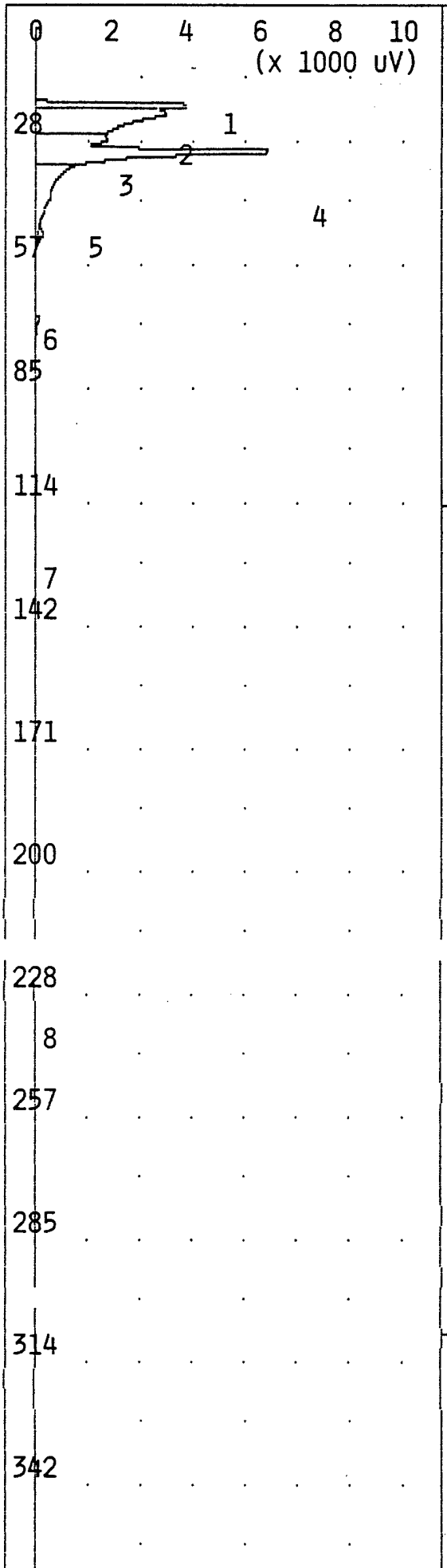
+H

228
257
285
314
342

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-001BH 9.0-10.0 14G
JB

ANALYSIS #11 10S+ GC FUNCTION ANALYSIS REPORT



LH

TIME PRINTED: AUG 8,95 12:01
SAMPLE TIME: AUG 8,95 11:54

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

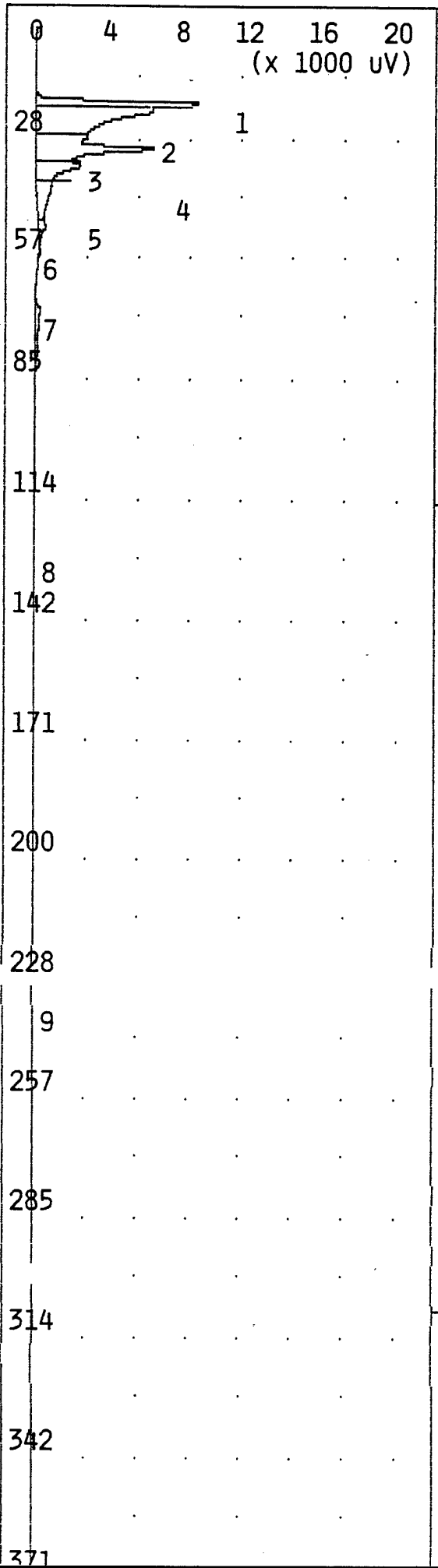
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	6.974	MVS	18.2
2	UNKNOWN	17.30	MVS	20.0
3	UNKNOWN	4.353	MVS	26.1
4	UNKNOWN	24.78	MVS	29.0
5	UNKNOWN	0.335	MVS	48.1
6	BENZENE	1.054	PPB	67.8
7	TOLUENE	0.532	PPB	127.8
8	ETHYLBENZENE	0.970	PPB	232.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-001BH 13.5-14.5 20G

ANALYSIS #12 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 12:11
SAMPLE TIME: AUG 8,95 12:04

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

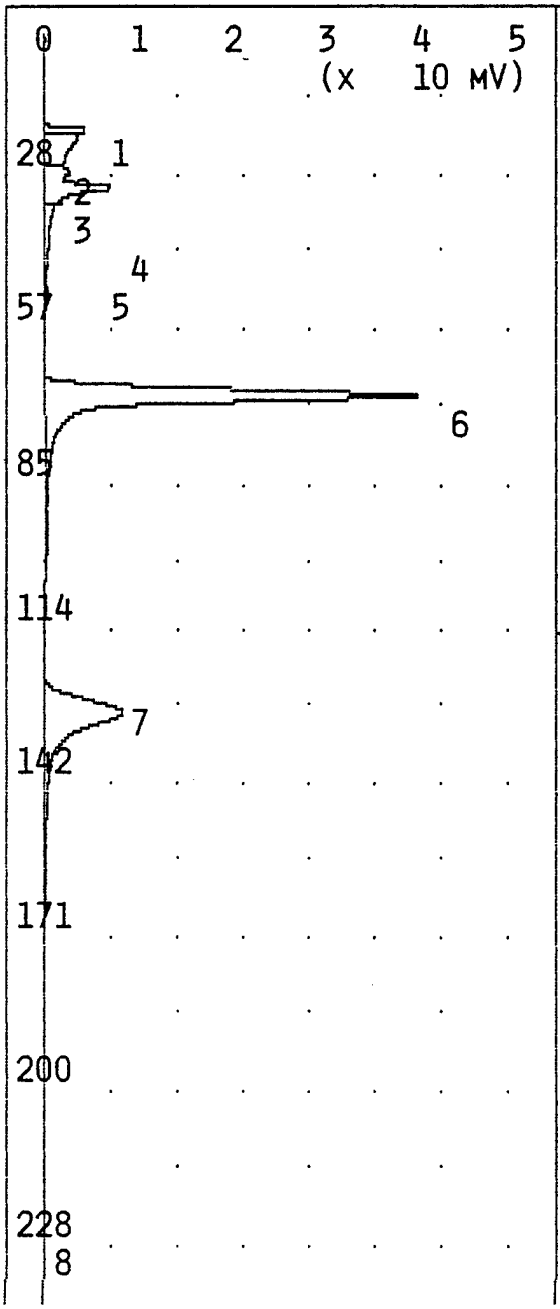
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	15.45	MVS	18.3
2	UNKNOWN	27.28	MVS	19.9
3	UNKNOWN	5.306	MVS	26.0
4	UNKNOWN	17.19	MVS	28.9
5	UNKNOWN	13.30	MVS	33.2
6	UNKNOWN	1.533	MVS	48.1
7	BENZENE	1.617	PPB	67.6
8	TOLUENE	0.370	PPB	127.4
9	ETHYLBENZENE	1.251	PPB	231.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-001BH 16.5-17.5 17G

ANALYSIS #14 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 13:18
SAMPLE TIME: AUG 8,95 13:12

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	7.174	MVS	18.2
2	UNKNOWN	16.08	MVS	19.9
3	UNKNOWN	6.323	MVS	26.1
4	UNKNOWN	29.03	MVS	29.0
5	UNKNOWN	0.278	MVS	48.4
6	BENZENE	102.5	PPB	67.4
7	TOLUENE	102.1	PPB	127.8
8	UNKNOWN	0.631	MVS	230.6
9	ETHYLBENZENE	101.3	PPB	257.8
10	M,P-XYLENE	206.4	PPB	276.0
11	O-XYLENE	69.01	PPB	327.4

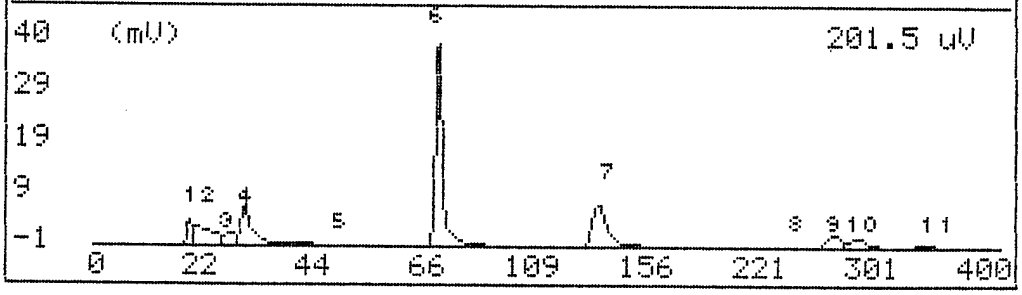
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

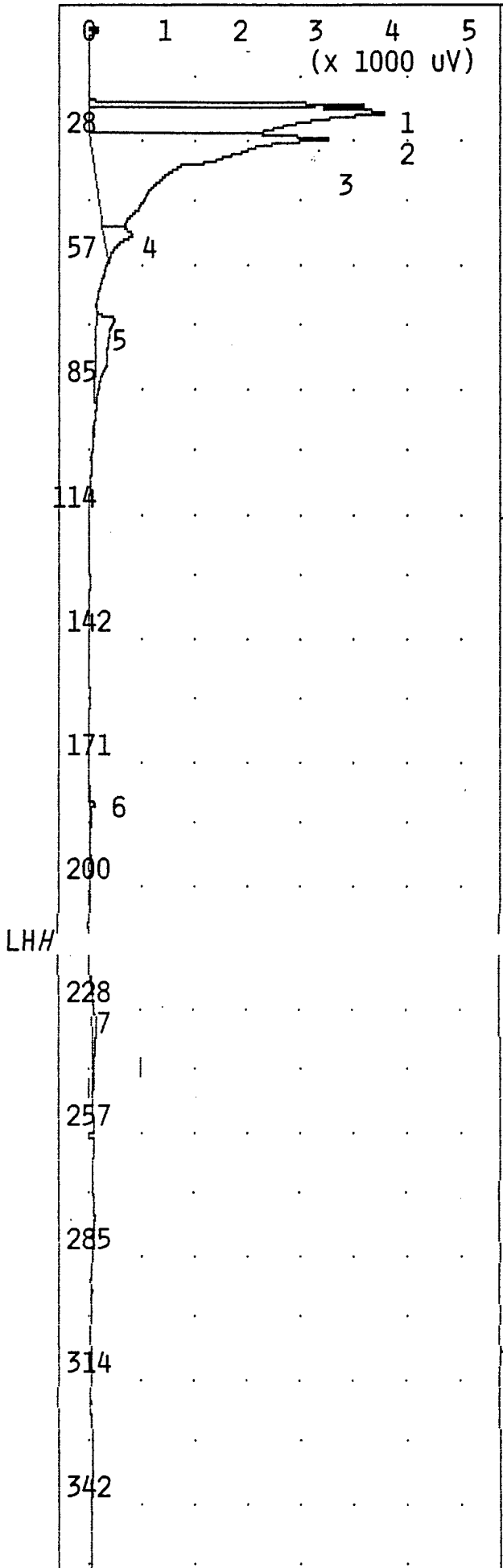
Fault: Calibrant 10S+ GC Function Aug 8,95 13:23
-- Analysis No 14 -- Run at - Aug 8,95 13:12 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	6.323 mVS	-No-	26.1 sec
4	Unknown	29.03 mVS	-No-	29.0 sec
5	Unknown	0.278 mVS	-No-	48.4 sec
6	benzene	100.0 ppb	-No-	67.4 sec
7	toluene	100.0 ppb	-No-	127.8 sec
8	Unknown	0.633 mVS	-No-	230.6 sec
9	ethylbenzene	100.0 ppb	-No-	257.8 sec
10	m,p-xylene	200.0 ppb	-No-	276.0 sec
11	o-xylene	100.0 ppb	-No-	327.4 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #15 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 13:31
SAMPLE TIME: AUG 8,95 13:24

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

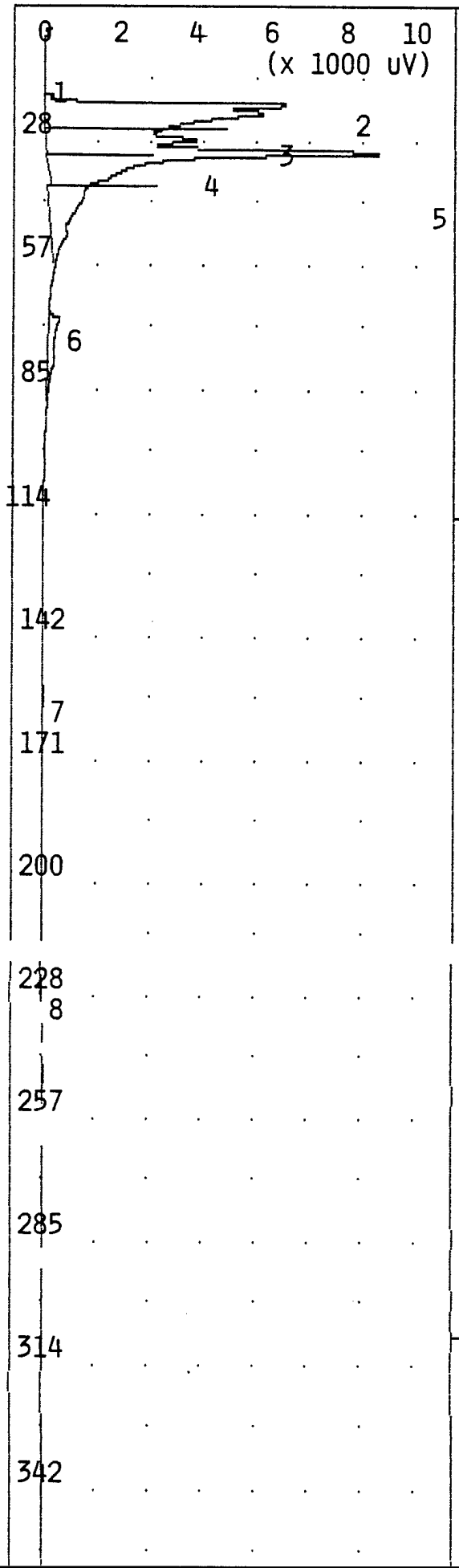
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	5.415	MVS	18.4
2	UNKNOWN	18.17	MVS	20.2
3	UNKNOWN	25.81	MVS	26.2
4	UNKNOWN	1.417	MVS	48.5
5	BENZENE	1.942	PPB	68.0
6	UNKNOWN	0.330	MVS	179.0
7	UNKNOWN	0.987	MVS	229.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #16 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 13:41
SAMPLE TIME: AUG 8,95 13:34

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

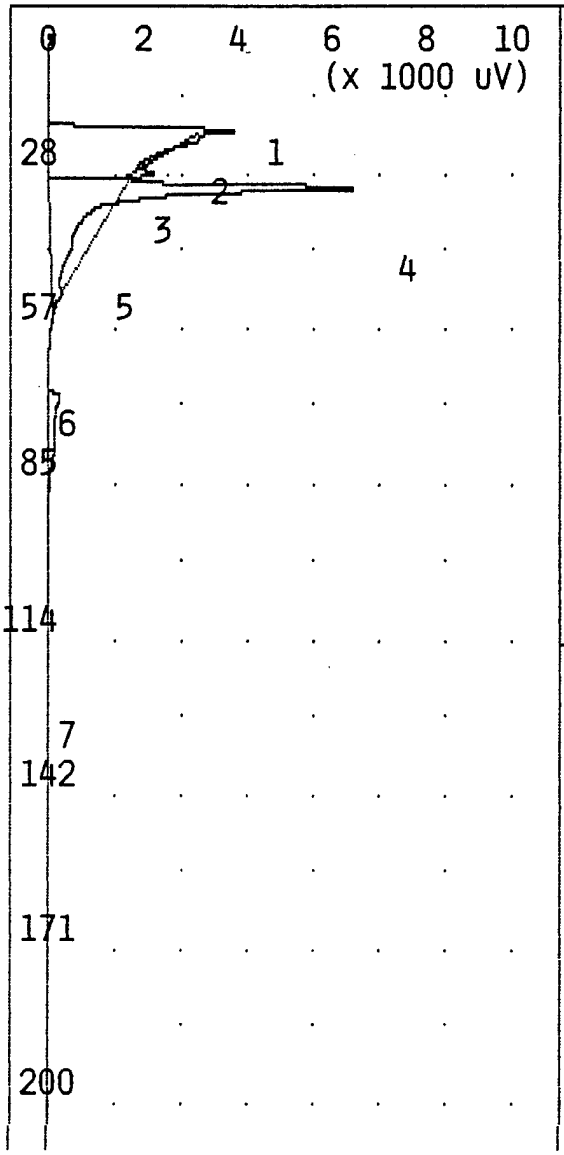
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	0.317 MVS	16.5
2	UNKNOWN	10.13 MVS	18.3
3	UNKNOWN	24.33 MVS	20.1
4	UNKNOWN	9.268 MVS	26.1
5	UNKNOWN	39.32 MVS	29.0
6	BENZENE	2.044 PPB	67.7
7	UNKNOWN	0.558 MVS	156.2
8	UNKNOWN	0.474 MVS	229.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-004BH 0.5- 1.5 14G

ANALYSIS #17 10S+ GC FUNCTION ANALYSIS REPORT



LH

228
257
285
314
342

TIME PRINTED: AUG 8,95 13:51
SAMPLE TIME: AUG 8,95 13:44

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

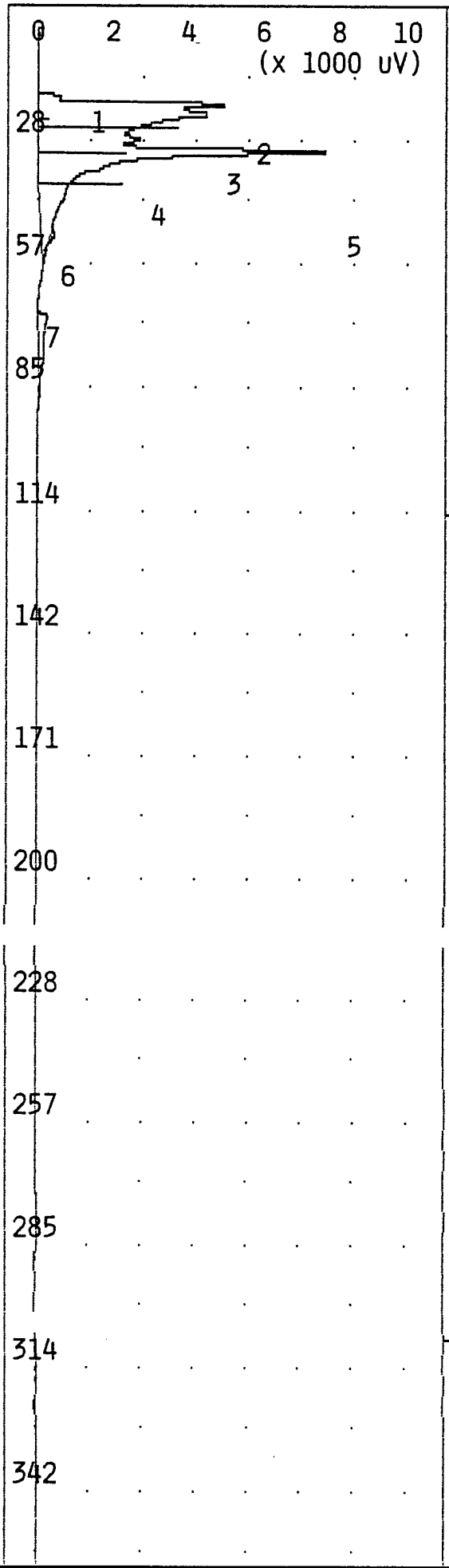
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	25.46 MVS	18.4
2	UNKNOWN	0.323 MVS	19.9
3	UNKNOWN	0.502 MVS	26.2
4	UNKNOWN	23.33 MVS	29.2
5	UNKNOWN	0.203 MVS	48.0
6	BENZENE	1.922 PPB	67.7
7	TOLUENE	0.542 PPB	128.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-004BH 4.0- 5.0 20G

ANALYSIS #18 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 14:03
SAMPLE TIME: AUG 8,95 13:56

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

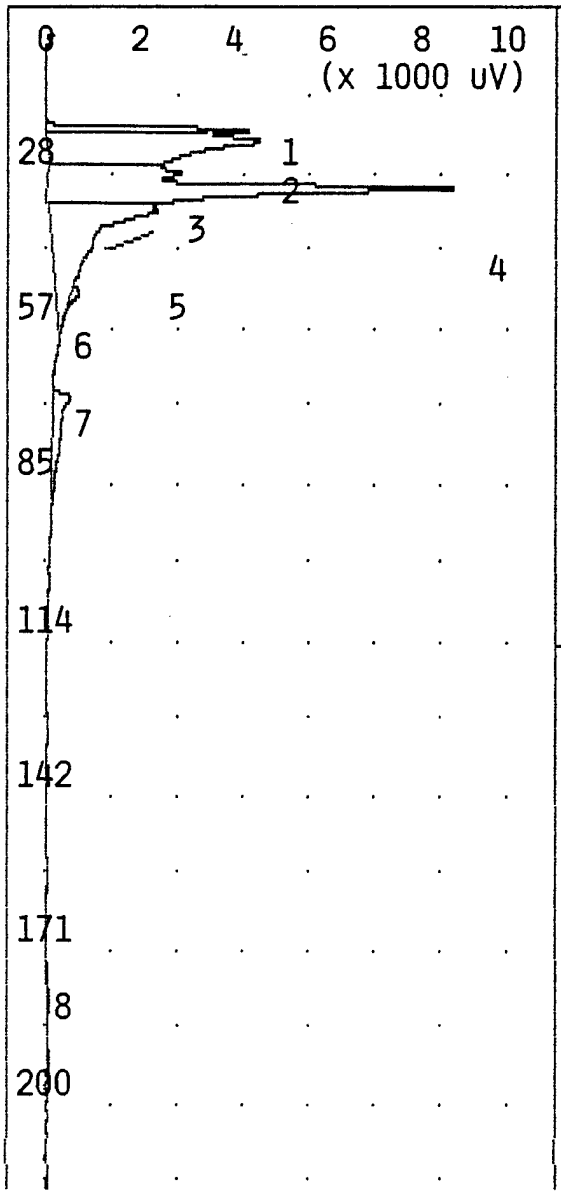
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	0.761 MVS	16.8
2	UNKNOWN	8.085 MVS	18.4
3	UNKNOWN	20.39 MVS	20.9
4	UNKNOWN	6.108 MVS	26.4
5	UNKNOWN	30.47 MVS	29.2
6	UNKNOWN	0.213 MVS	48.8
7	BENZENE	1.905 PPB	67.7

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-004BH 9.0-10.0 11G

ANALYSIS #19 10S+ GC FUNCTION ANALYSIS REPORT



LHO

TIME PRINTED: AUG 8,95 14:12
SAMPLE TIME: AUG 8,95 14:05

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

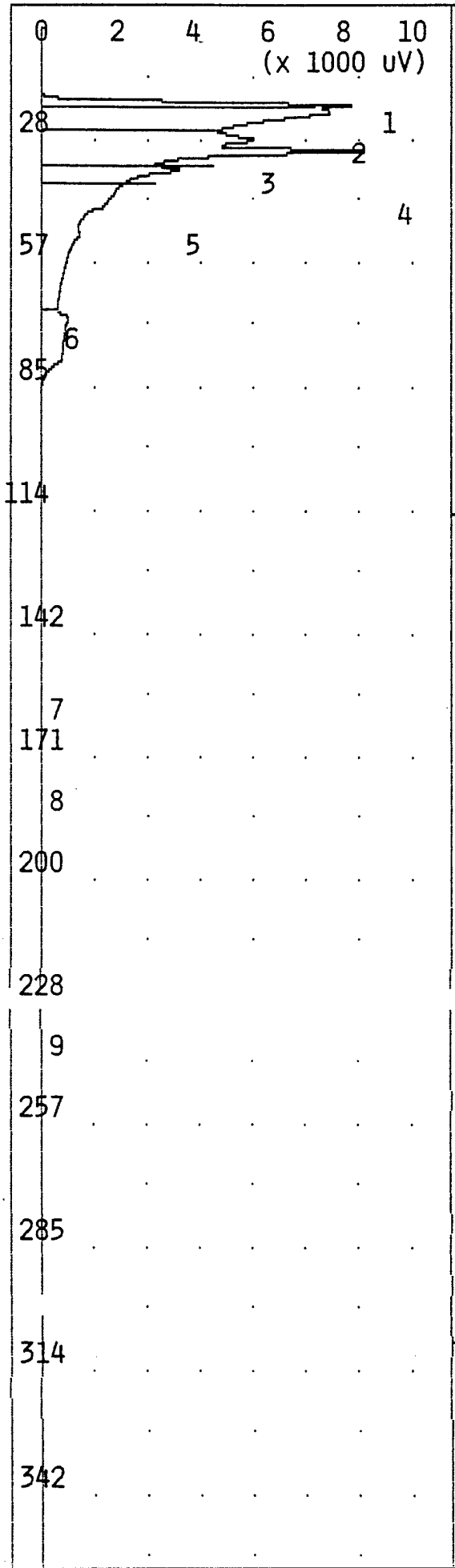
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	6.358	MVS	18.4
2	UNKNOWN	20.58	MVS	20.8
3	UNKNOWN	6.479	MVS	26.4
4	UNKNOWN	37.32	MVS	29.4
5	UNKNOWN	0.747	MVS	33.4
6	UNKNOWN	0.317	MVS	48.8
7	BENZENE	2.264	PPB	67.8
8	UNKNOWN	0.470	MVS	179.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-004BH 13.5-14.5 17G

ANALYSIS #20 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95	14:22	
SAMPLE TIME: AUG 8,95	14:15	
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

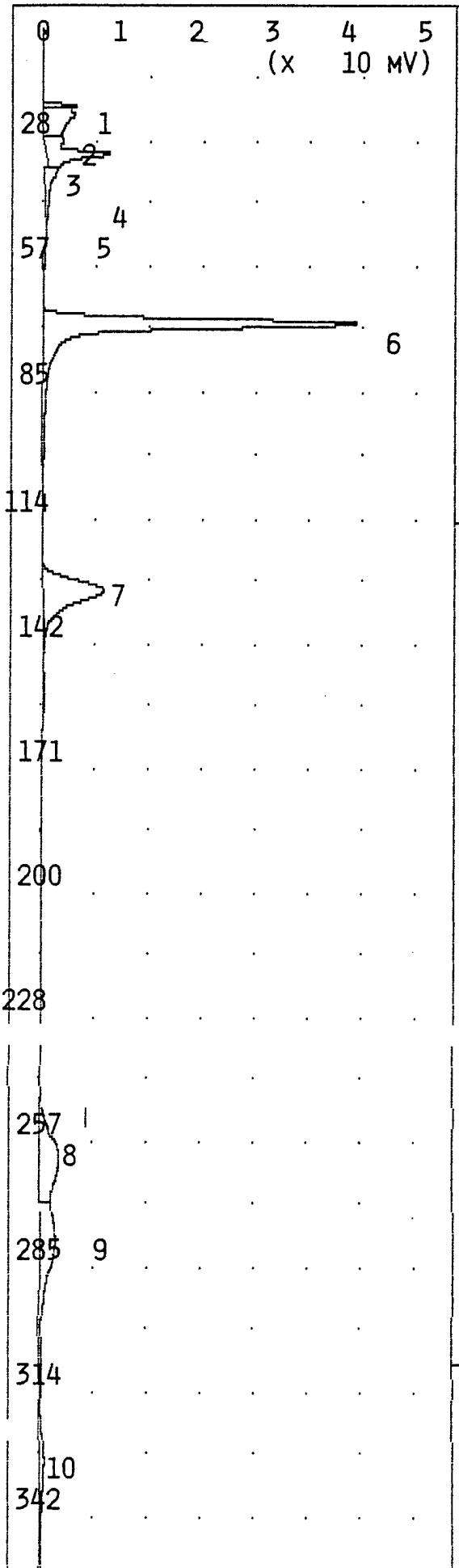
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	15.48	MVS	18.6
2	UNKNOWN	33.04	MVS	20.1
3	UNKNOWN	18.20	MVS	26.5
4	UNKNOWN	24.65	MVS	29.3
5	UNKNOWN	47.30	MVS	33.7
6	BENZENE	10.52	PPB	68.0
7	UNKNOWN	3.747	MVS	154.6
8	UNKNOWN	0.712	MVS	177.2
9	ETHYLBENZENE	1.827	PPB	234.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-004BH 15.5-16.5 14G

ANALYSIS #21 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 14:32
SAMPLE TIME: AUG 8,95 14:25

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

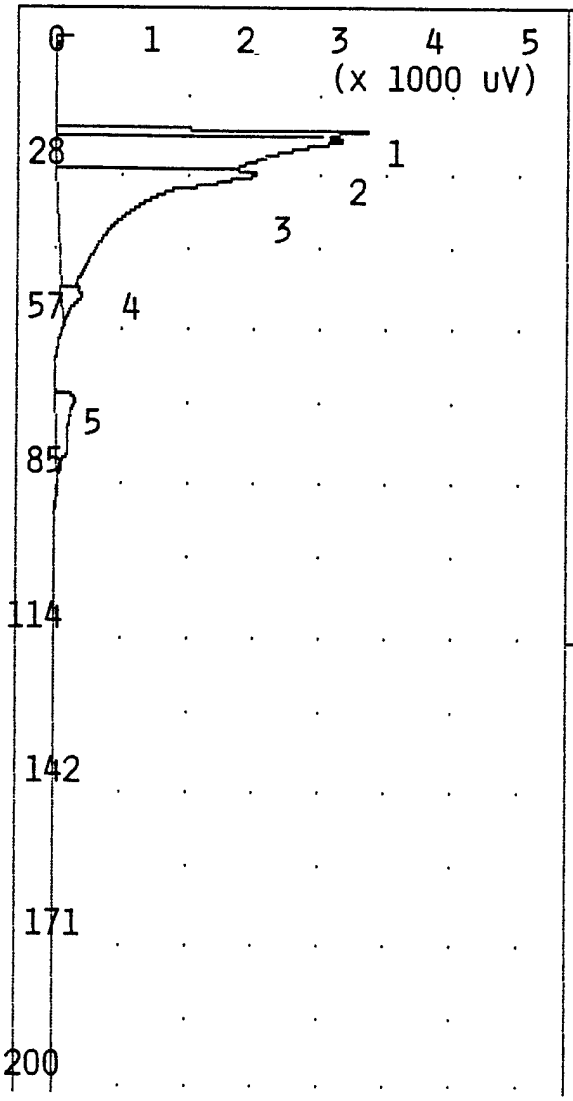
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	6.634 MVS	18.6
2	UNKNOWN	19.52 MVS	20.4
3	UNKNOWN	5.949 MVS	26.6
4	UNKNOWN	31.84 MVS	29.5
5	UNKNOWN	0.202 MVS	49.0
6	BENZENE	101.8 PPB	68.2
7	TOLUENE	91.00 PPB	128.6
8	ETHYLBENZENE	101.0 PPB	258.6
9	M,P-XYLENE	201.9 PPB	277.3
10	O-XYLENE	100.1 PPB	328.5

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANB
100 PPB BTEX

ANALYSIS #22 10S+ GC FUNCTION ANALYSIS REPORT



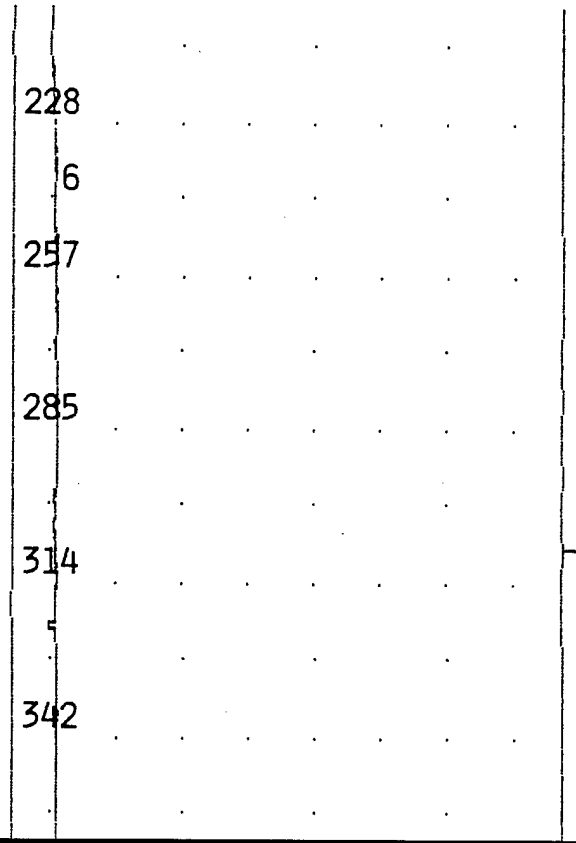
TIME PRINTED: AUG 8,95 14:42
SAMPLE TIME: AUG 8,95 14:35

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

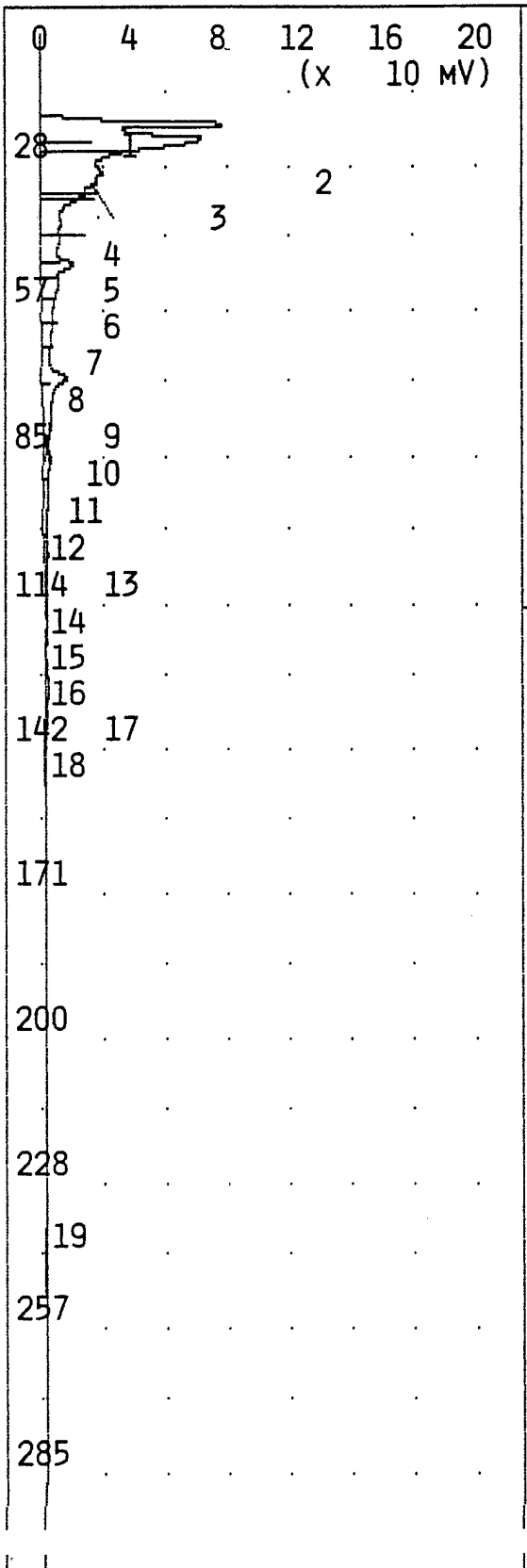
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	5.233	MVS	18.7
2	UNKNOWN	15.23	MVS	20.4
3	UNKNOWN	17.52	MVS	26.5
4	UNKNOWN	0.735	MVS	49.4
5	BENZENE	2.046	PPB	68.5
6	UNKNOWN	0.378	MVS	231.8



NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #23 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 14:52
SAMPLE TIME: AUG 8,95 14:45

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

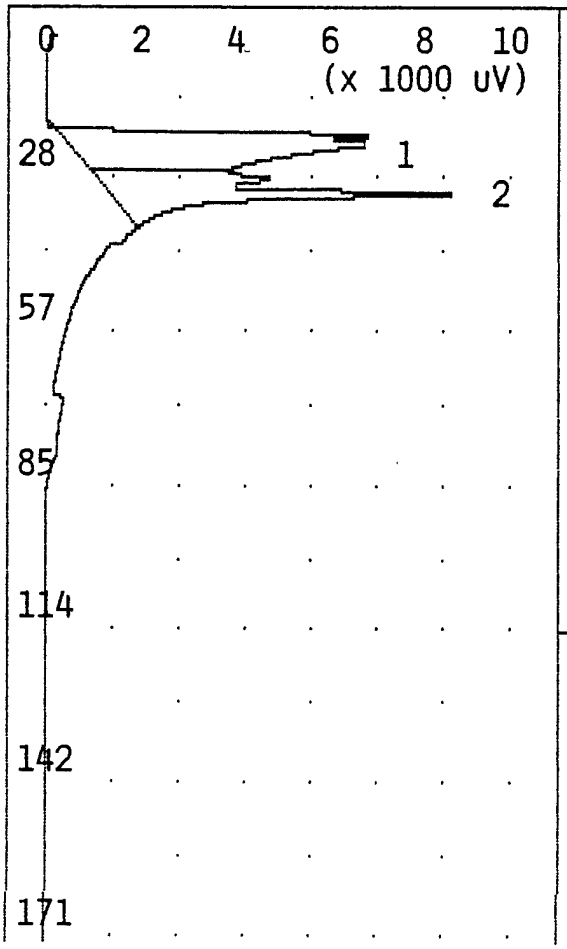
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	20.95	MVS	17.4
2	UNKNOWN	120.4	MVS	18.4
3	UNKNOWN	349.4	MVS	21.2
4	UNKNOWN	0.853	MVS	26.9
5	UNKNOWN	47.06	MVS	28.0
6	UNKNOWN	55.57	MVS	29.9
7	UNKNOWN	77.13	MVS	32.1
8	UNKNOWN	24.52	MVS	38.0
9	UNKNOWN	32.77	MVS	41.2
10	UNKNOWN	47.32	MVS	46.2
11	UNKNOWN	55.47	MVS	50.2
12	UNKNOWN	27.10	MVS	58.3
13	BENZENE	60.33	PPB	68.5
14	UNKNOWN	0.935	MVS	77.7
15	UNKNOWN	18.31	MVS	84.5
16	UNKNOWN	18.27	MVS	90.6
17	UNKNOWN	20.15	MVS	102.2
18	TOLUENE	24.01	PPB	128.8
19	UNKNOWN	0.902	MVS	231.0

LH

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-004BH 18.5-19.0 37G

ANALYSIS #24 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 15:02
SAMPLE TIME: AUG 8,95 14:55

METHOD

SLOPE UP	5.000	MV/SEC
SLOPE DOWN	15.00	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

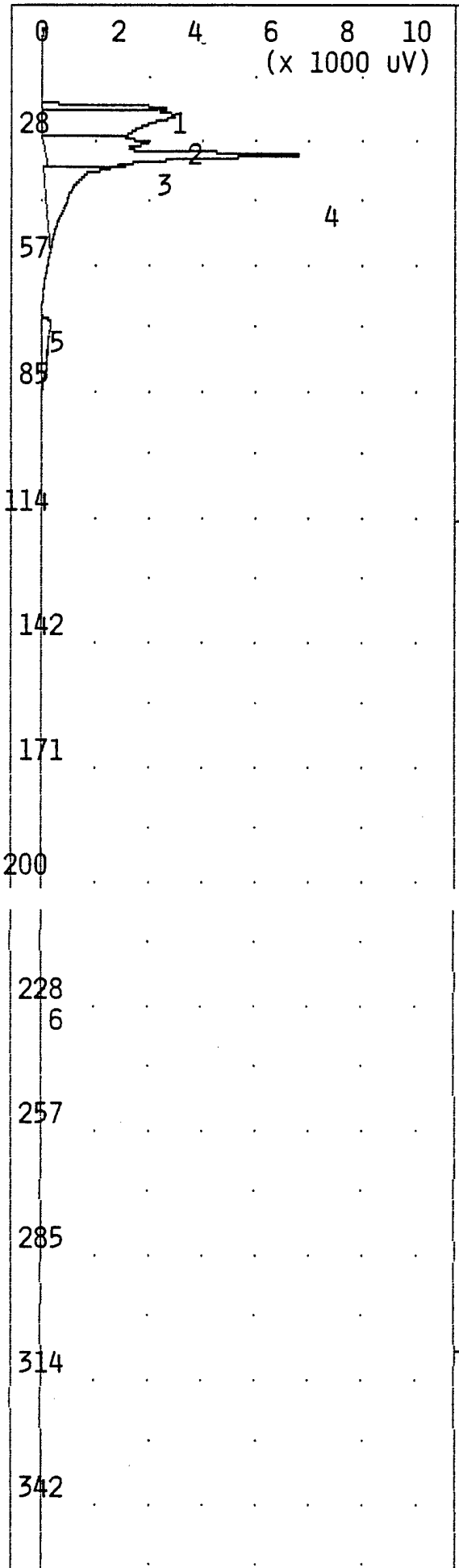
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	38.77 MVS	19.1
2	UNKNOWN	25.90 MVS	29.9

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-002BH 0.5- 1.5 ~~1G~~ 14g GB

ANALYSIS #25 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 15:11
SAMPLE TIME: AUG 8,95 15:05

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

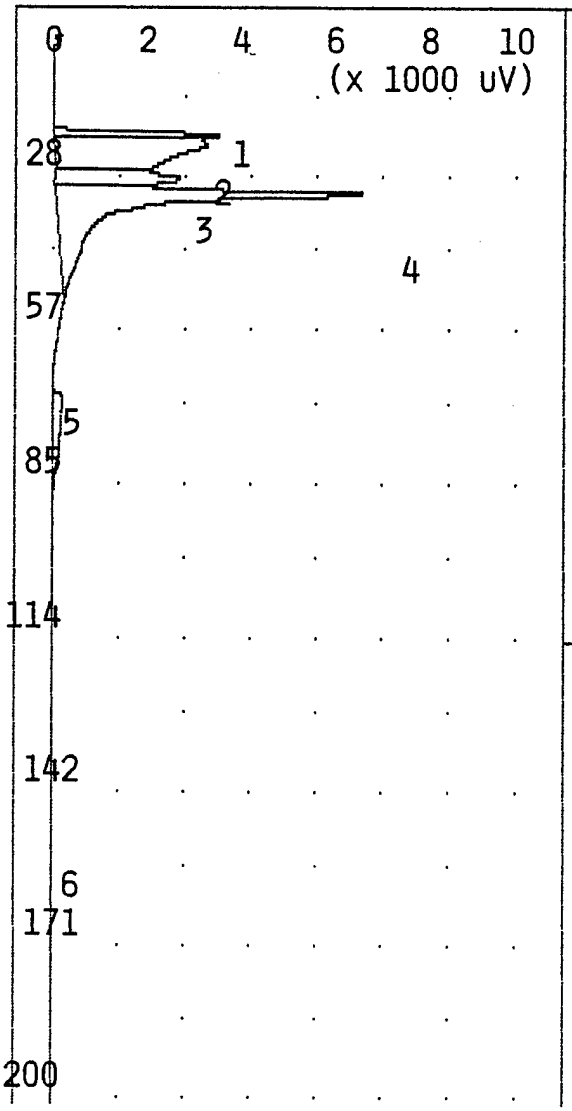
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	4.979	MVS	19.0
2	UNKNOWN	17.17	MVS	21.0
3	UNKNOWN	6.677	MVS	27.0
4	UNKNOWN	25.48	MVS	29.9
5	BENZENE	2.319	PPB	68.5
6	UNKNOWN	0.419	MVS	226.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-002BH 4.0- 5.0
17G

ANALYSIS #26 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 15:21
SAMPLE TIME: AUG 8,95 15:14

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

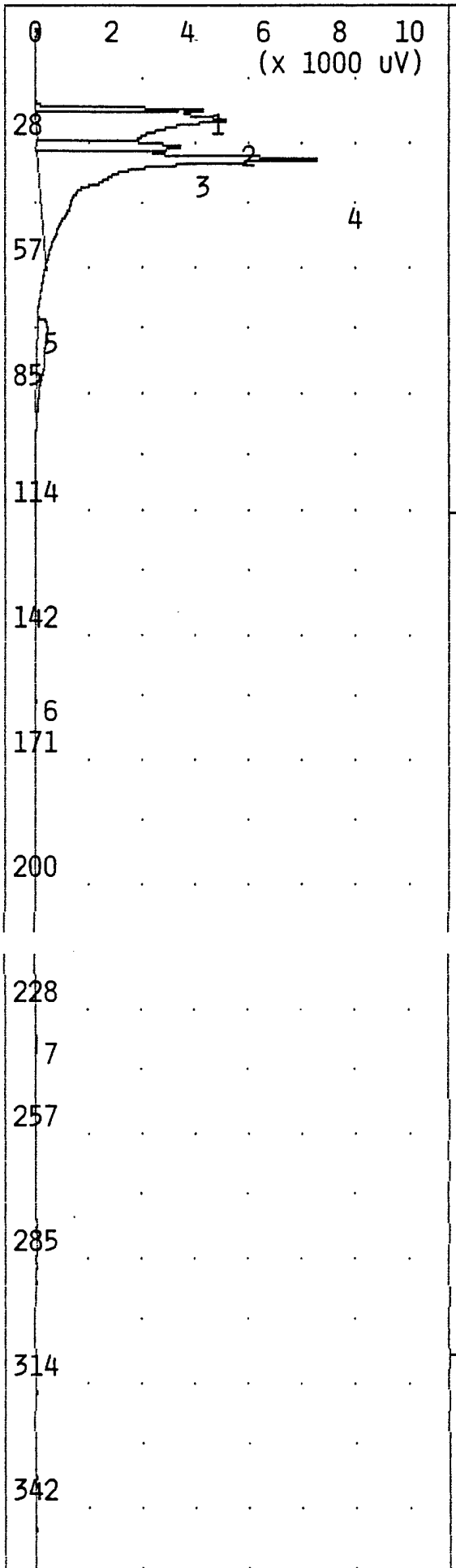
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	5.672	MVS	19.0
2	UNKNOWN	15.77	MVS	20.7
3	UNKNOWN	6.834	MVS	27.0
4	UNKNOWN	23.68	MVS	30.1
5	BENZENE	2.324	PPB	69.6
6	UNKNOWN	0.533	MVS	156.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-002BH 9.0-10.0
17G

ANALYSIS #27 10S+ GC FUNCTION ANALYSIS REPORT



LH

TIME PRINTED: AUG 8,95	15:31
SAMPLE TIME: AUG 8,95	15:24

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

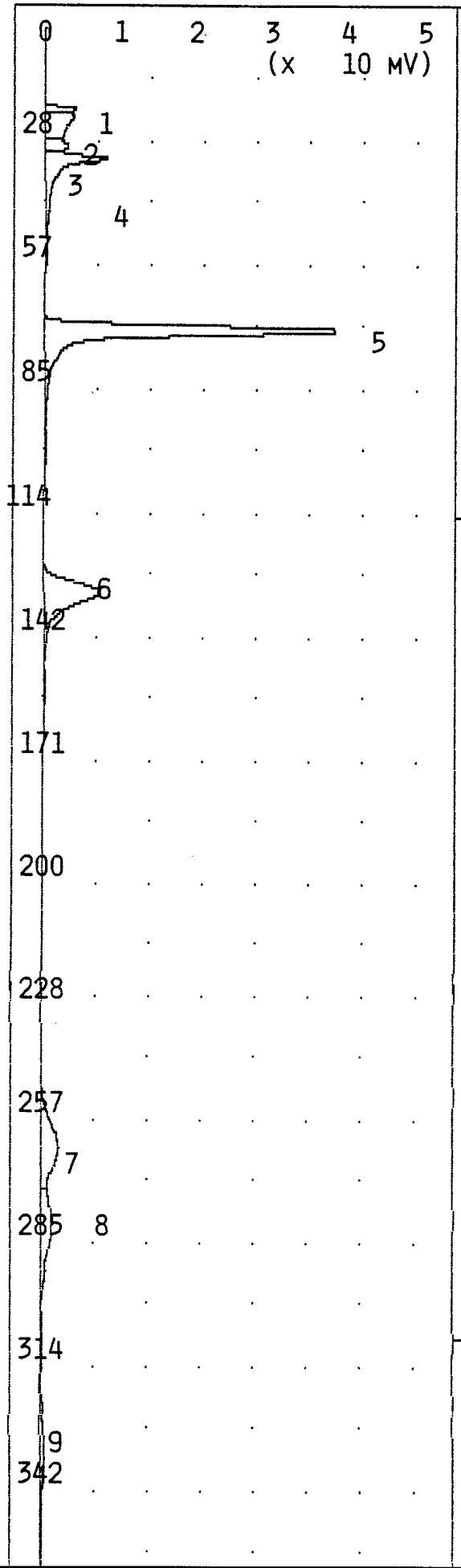
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	6.976 MVS	19.2
2	UNKNOWN	22.50 MVS	21.6
3	UNKNOWN	9.587 MVS	27.5
4	UNKNOWN	34.21 MVS	30.4
5	BENZENE	2.557 PPB	70.1
6	UNKNOWN	0.799 MVS	156.2
7	ETHYLBENZENE	1.941 PPB	235.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANG
591-002BH 13.5-14.0
17G

ANALYSIS #28 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 15:41
SAMPLE TIME: AUG 8,95 15:34

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	6.426	MVS	19.4
2	UNKNOWN	19.17	MVS	21.1
3	UNKNOWN	8.096	MVS	27.8
4	UNKNOWN	33.03	MVS	30.6
5	BENZENE	100.0	PPB	70.1
6	TOLUENE	82.59	PPB	130.5
7	ETHYLBENZENE	86.71	PPB	261.0
8	M,P-XYLENE	152.8	PPB	279.4
9	O-XYLENE	87.14	PPB	329.3

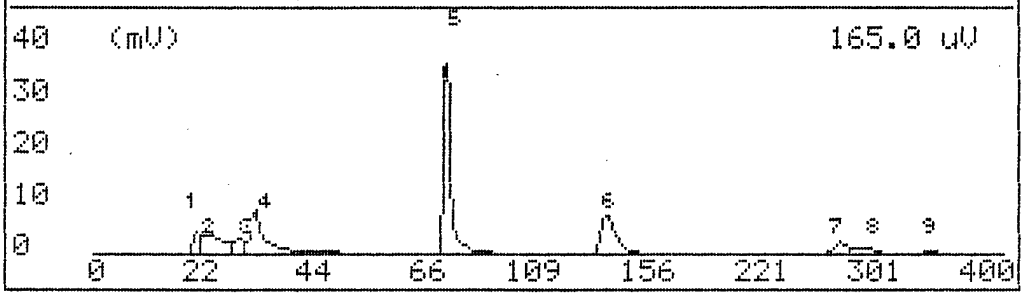
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

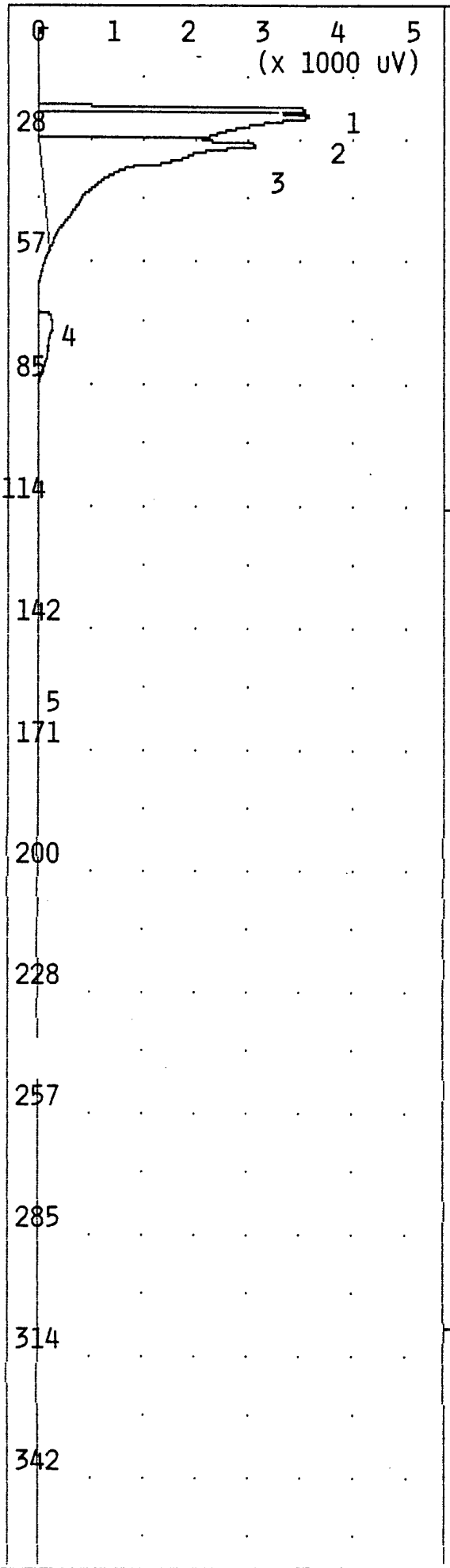
Fault: Calibrant 10S+ GC Function Aug 8,95 15:45
-- Analysis No 28 -- Run at - Aug 8,95 15:34 -

Pk No	Name	Conc/Area		Alarm	Ret.Time
1	Unknown	6.426	mVS	-No-	19.4 sec
2	Unknown	19.17	mVS	-No-	21.1 sec
3	Unknown	8.096	mVS	-No-	27.8 sec
4	Unknown	33.03	mVS	-No-	30.6 sec
5	benzene	100.0	ppb	-No-	70.1 sec
6	toluene	100.0	ppb	-No-	130.5 sec
7	ethylbenzene	99.99	ppb	-No-	261.0 sec
8	m,p-xylene	199.8	ppb	-No-	279.4 sec
9	o-xylene	99.35	ppb	-No-	329.3 sec

- Detected 9 peaks. [405 sec]



ANALYSIS #29 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 15:53
SAMPLE TIME: AUG 8,95 15:46

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

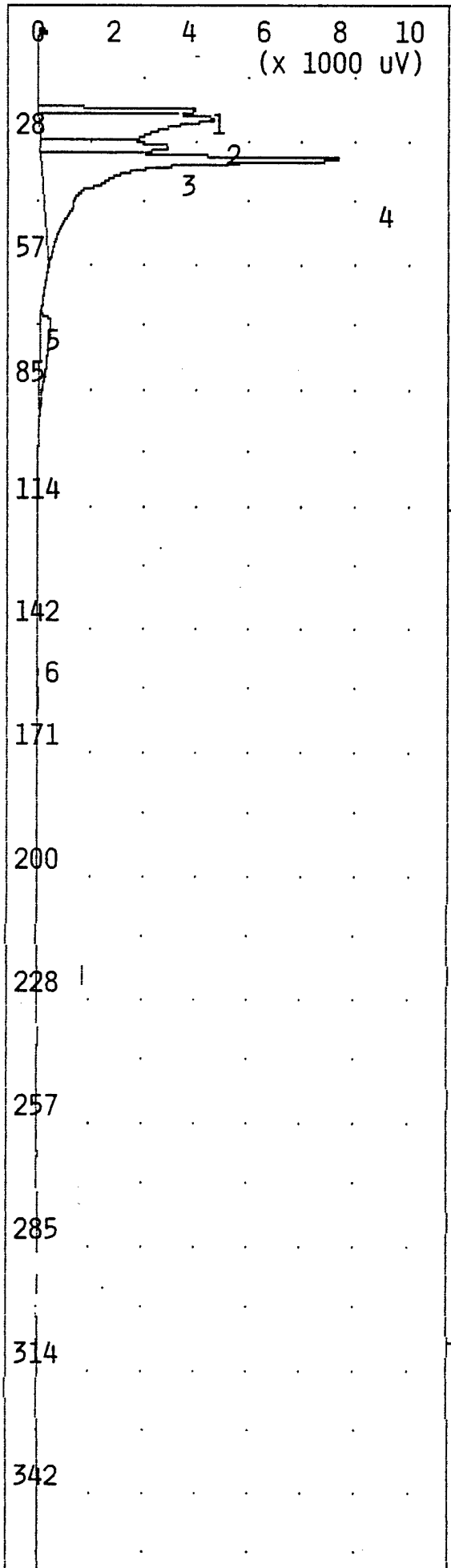
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	5.991 MVS	19.4
2	UNKNOWN	18.27 MVS	21.2
3	UNKNOWN	23.86 MVS	27.7
4	BENZENE	2.660 PPB	70.2
5	UNKNOWN	0.615 MVS	157.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
~~100 PPB BTEX~~
AIR BLANK
JJB

ANALYSIS #30 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 16:02
SAMPLE TIME: AUG 8,95 15:56

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

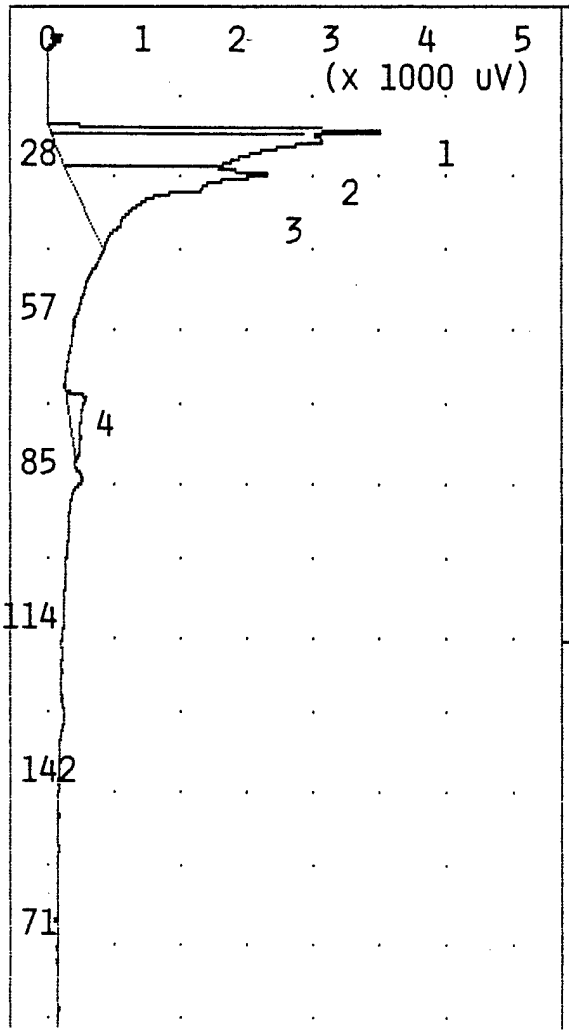
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	6.413 MVS	19.4
2	UNKNOWN	22.29 MVS	21.4
3	UNKNOWN	8.497 MVS	27.8
4	UNKNOWN	36.45 MVS	30.8
5	BENZENE	2.528 PPB	69.8
6	UNKNOWN	0.868 MVS	151.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-003BH 0.5- 1.5
17G

ANALYSIS #18 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 18:03
SAMPLE TIME: AUG 9,95 17:56

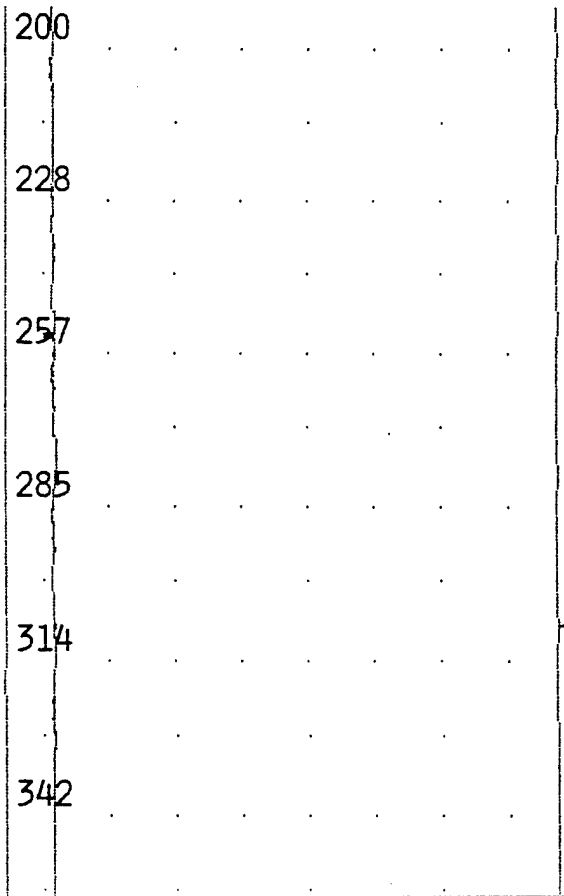
METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	38	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	5.800	MVS	18.4
2	UNKNOWN	12.94	MVS	20.2
3	UNKNOWN	11.73	MVS	26.4
4	BENZENE	1.309	PPB	68.0

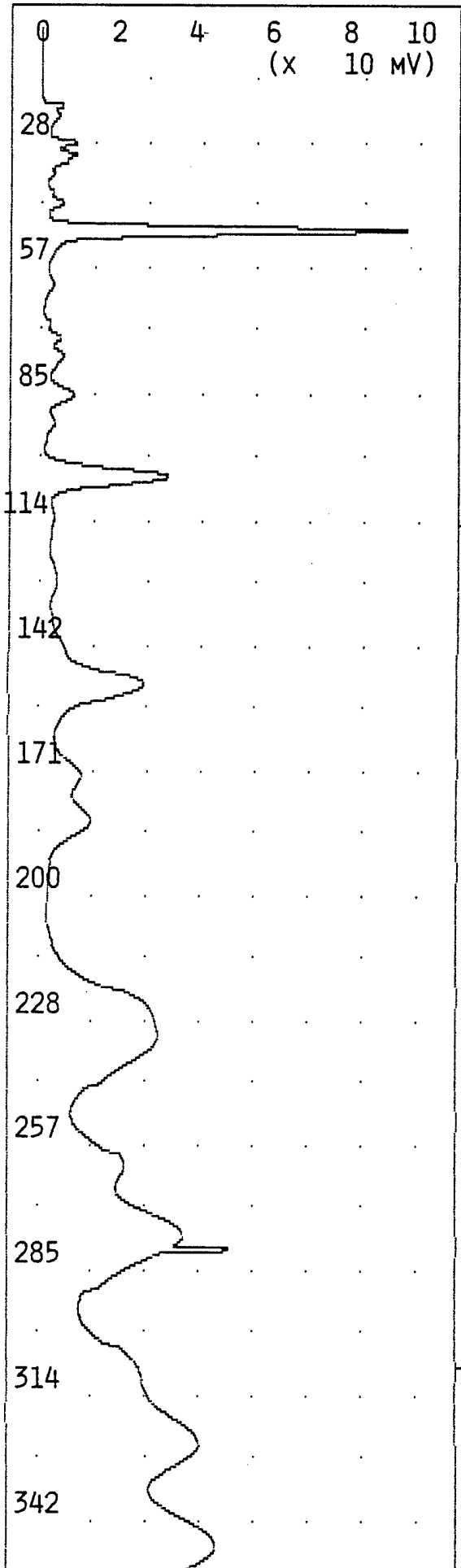
LH



NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #19 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 18:13		
SAMPLE TIME: AUG 9,95 18:06		
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	38	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

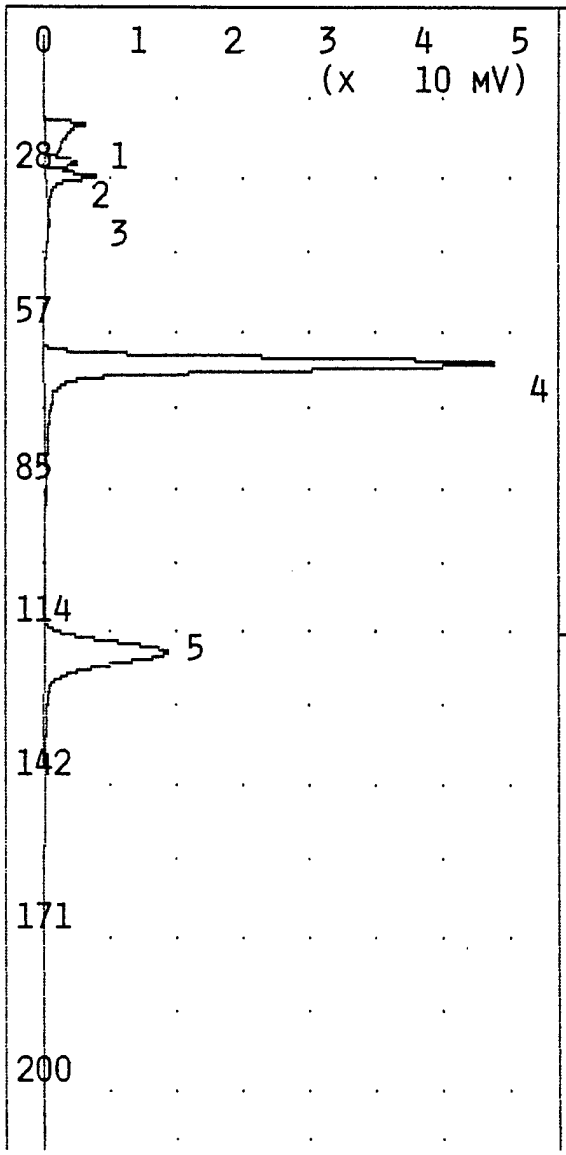
PEAK REPORT

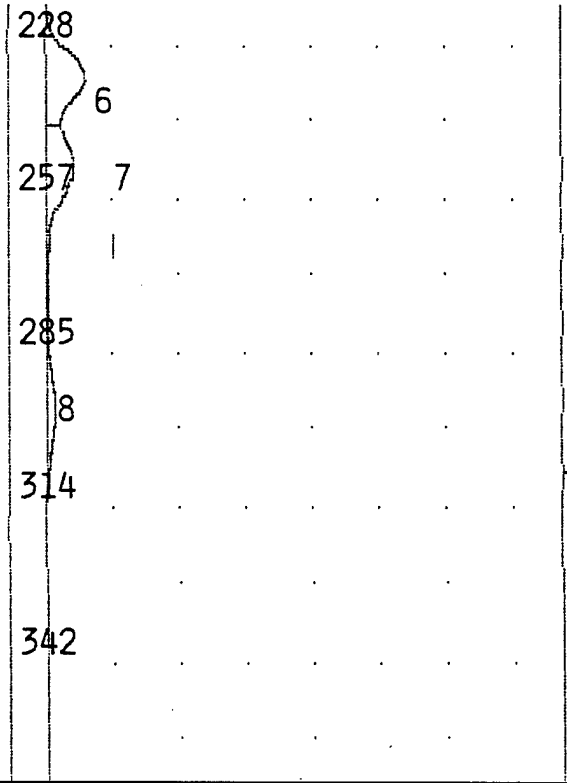
PK	COMPOUND NAME	AREA/CONC	R.T.

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
801-001BH
9.0-10.0 11G

ANALYSIS #1 10S+ GC FUNCTION ANALYSIS REPORT





TIME PRINTED: AUG 10,95 08:04
SAMPLE TIME: AUG 10,95 07:57

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	29	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	17.06 MVS	16.7
2	UNKNOWN	6.260 MVS	23.9
3	UNKNOWN	11.45 MVS	26.4
4	UNKNOWN	142.7 MVS	61.0
5	UNKNOWN	69.02 MVS	116.4
6	UNKNOWN	51.36 MVS	232.0
7	UNKNOWN	42.37 MVS	249.6
8	UNKNOWN	15.13 MVS	294.6

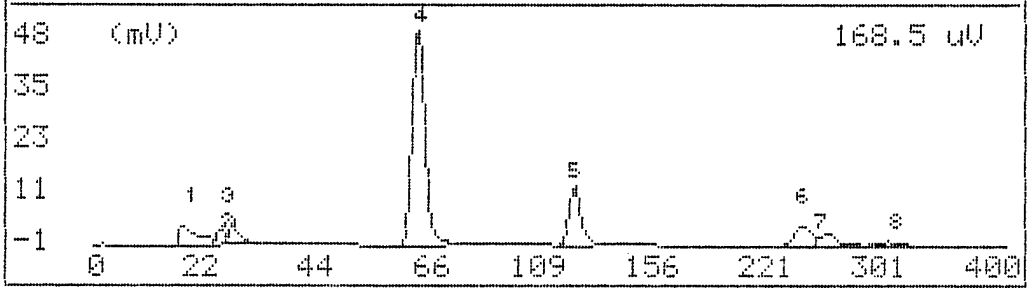
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

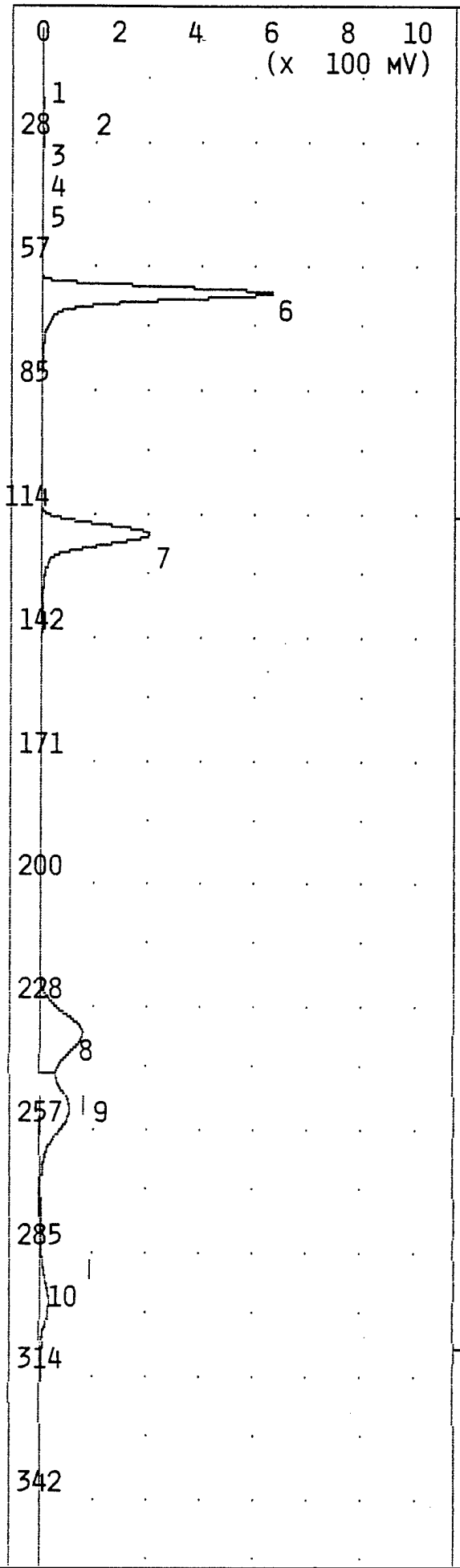
G.C. Ready 10S+ GC Function Aug 10,95 08:10
-- Analysis No 1 -- Run at - Aug 10,95 07:57 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
1	Unknown	17.06 mVS	-No-	16.7 sec
2	Unknown	6.260 mVS	-No-	23.9 sec
3	Unknown	11.45 mVS	-No-	26.4 sec
4	benzene	100.0 ppb	-No-	61.0 sec
5	toluene	100.0 ppb	-No-	116.4 sec
6	ethylbenzene	100.0 ppb	-No-	232.0 sec
7	m,p-xylene	200.0 ppb	-No-	249.6 sec
8	o-xylene	100.0 ppb	-No-	294.6 sec

- Detected 8 peaks. [405 sec]



ANALYSIS #2 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 10,95 08:18
SAMPLE TIME: AUG 10,95 08:11

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	30	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	0.056 MVS	15.2
2	UNKNOWN	5.388 MVS	16.8
3	UNKNOWN	13.75 MVS	18.4
4	UNKNOWN	7.011 MVS	24.1
5	UNKNOWN	24.58 MVS	26.6
6	BENZENE	1.709 PPM	61.6
7	TOLUENE	2.596 PPM	117.0
8	ETHYLBENZENE	2.717 PPM	233.2
9	M,P-XYLENE	5.251 PPM	250.4
10	O-XYLENE	2.647 PPM	294.9

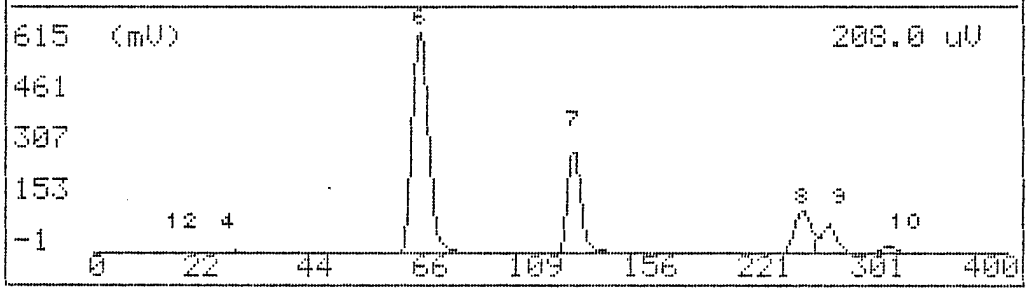
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANG
1 PPM BTEX

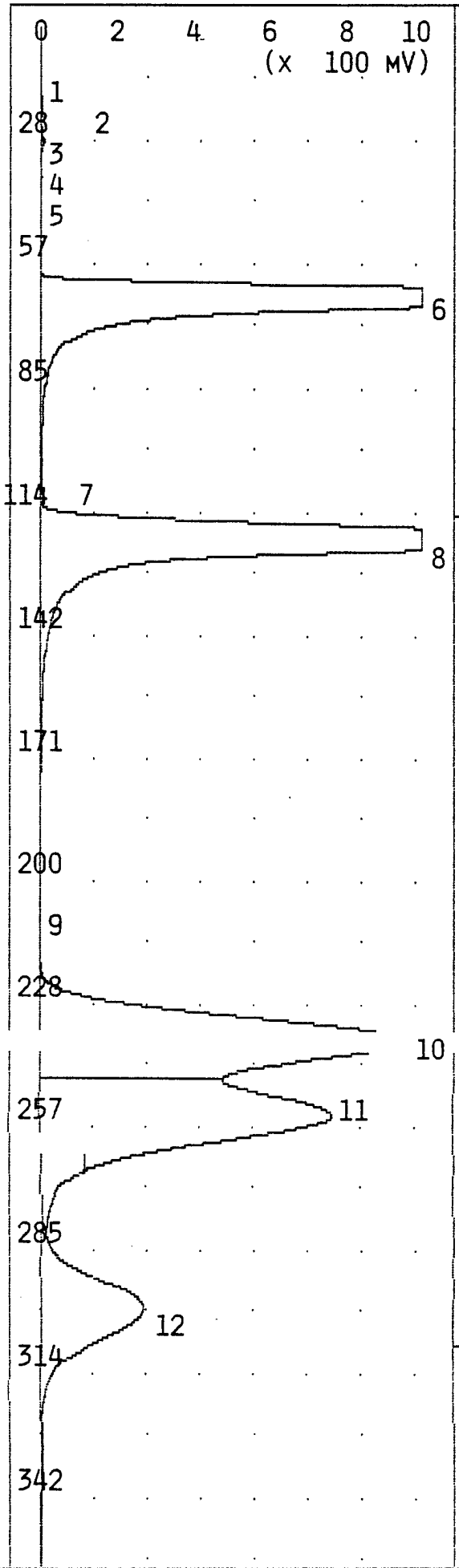
G.C. Ready 10S+ GC Function Aug 10,95 08:22
-- Analysis No 2 -- Run at - Aug 10,95 08:11 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
2	Unknown	5.388 mVS	-No-	16.8 sec
3	Unknown	13.75 mVS	-No-	18.4 sec
4	Unknown	7.011 mVS	-No-	24.1 sec
5	Unknown	24.58 mVS	-No-	26.6 sec
6	benzene	1.000 ppm	-No-	61.6 sec
7	toluene	1.000 ppm	-No-	117.0 sec
8	ethylbenzene	1.000 ppm	-No-	233.2 sec
9	m,p-xylene	2.000 ppm	-No-	250.4 sec
10	o-xylene	1.001 ppm	-No-	294.9 sec

- Detected 10 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #4 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 10,95 08:42
SAMPLE TIME: AUG 10,95 08:35

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	32	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	0.045 MVS	15.4
2	UNKNOWN	5.584 MVS	16.9
3	UNKNOWN	20.57 MVS	18.6
4	UNKNOWN	8.815 MVS	24.3
5	UNKNOWN	47.58 MVS	26.9
6	BENZENE	5.633 PPM	62.4
7	UNKNOWN	2.603 MVS	106.9
8	TOLUENE	7.838 PPM	118.2
9	UNKNOWN	3.327 MVS	203.6
10	ETHYLBENZENE	8.639 PPM	235.0
11	M,P-XYLENE	19.98 PPM	252.2
12	O-XYLENE	11.42 PPM	297.3

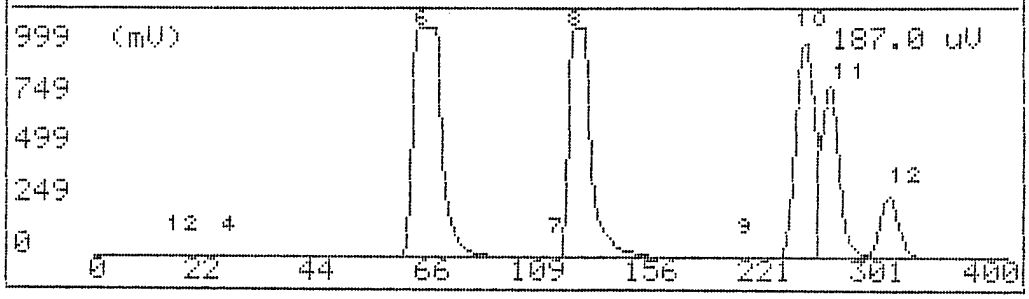
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
10 PPM BTEX

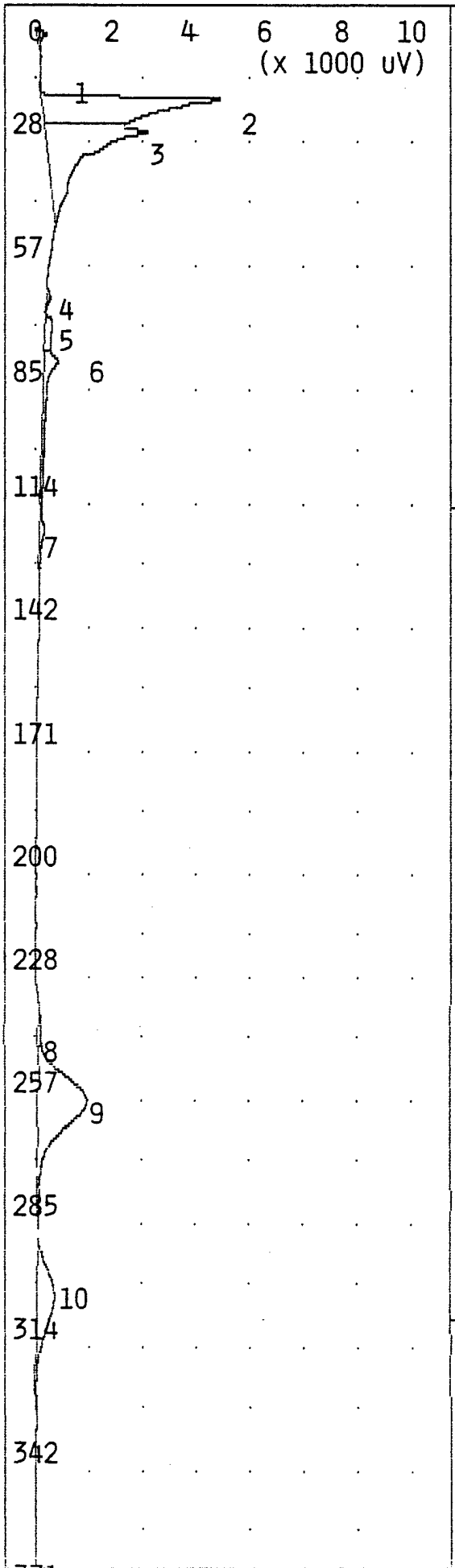
G.C. Ready 10S+ GC Function Aug 10,95 08:47
-- Analysis No 4 -- Run at - Aug 10,95 08:35 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
4	Unknown	8.815 mVS	-No-	24.3 sec
5	Unknown	47.58 mVS	-No-	26.9 sec
6	benzene	10.00 ppm	-No-	62.4 sec
7	Unknown	2.603 mVS	-No-	106.9 sec
8	toluene	10.00 ppm	-No-	118.2 sec
9	Unknown	3.327 mVS	-No-	203.6 sec
10	ethylbenzene	10.00 ppm	-No-	235.0 sec
11	m,p-xylene	20.00 ppm	-No-	252.2 sec
12	o-xylene	10.00 ppm	-No-	297.3 sec

- Detected 12 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #8 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 10,95 09:25
SAMPLE TIME: AUG 10,95 09:19

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

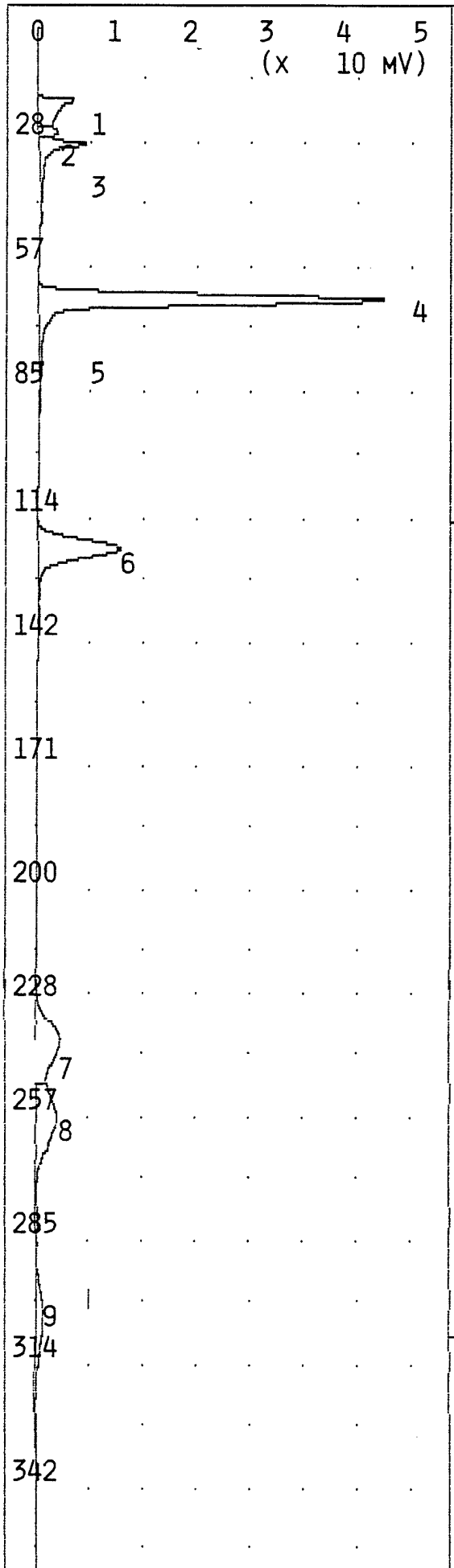
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	1.288	MVS	1.2
2	UNKNOWN	22.96	MVS	17.0
3	UNKNOWN	19.70	MVS	24.6
4	BENZENE	0.158	PPB	62.7
5	UNKNOWN	1.385	MVS	68.6
6	UNKNOWN	3.009	MVS	77.4
7	TOLUENE	0.835	PPB	118.6
8	ETHYLBENZENE	1.274	PPB	239.0
9	M,P-XYLENE	88.38	PPB	255.2
10	O-XYLENE	48.78	PPB	301.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK
200 MICROLITER INJECTION

ANALYSIS #17 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 10,95 10:57
SAMPLE TIME: AUG 10,95 10:50

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	20.76	MVS	17.1
2	UNKNOWN	5.302	MVS	24.4
3	UNKNOWN	19.75	MVS	27.2
4	BENZENE	96.43	PPB	62.8
5	UNKNOWN	0.439	MVS	77.2
6	TOLUENE	83.62	PPB	119.3
7	ETHYLBENZENE	77.66	PPB	238.4
8	M,P-XYLENE	188.1	PPB	255.4
9	O-XYLENE	101.0	PPB	301.3

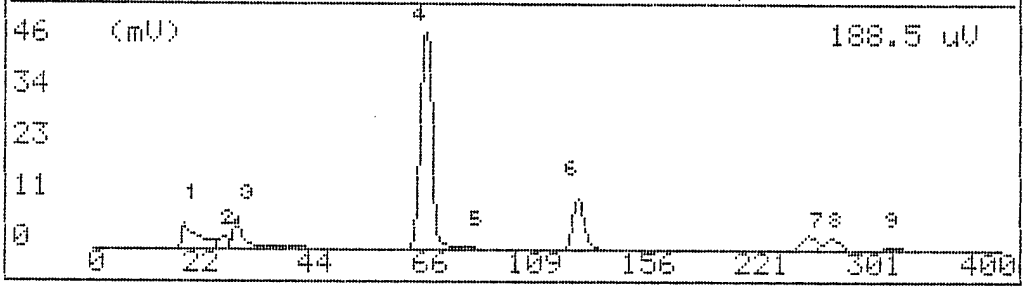
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

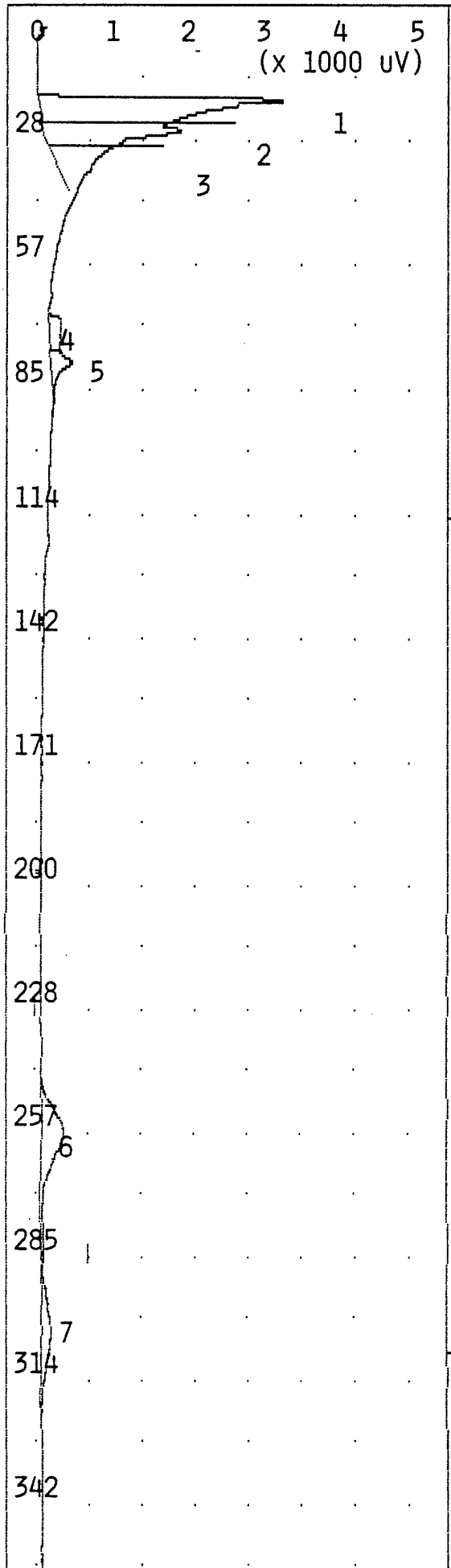
G.C. Ready 10S+ GC Function Aug 10,95 11:01
-- Analysis No 17 -- Run at - Aug 10,95 10:50 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
1	Unknown	20.76 mVS	-No-	17.1 sec
2	Unknown	5.302 mVS	-No-	24.4 sec
3	Unknown	19.75 mVS	-No-	27.2 sec
4	benzene	99.99 ppb	-No-	62.8 sec
5	Unknown	0.439 mVS	-No-	77.2 sec
6	toluene	100.0 ppb	-No-	119.3 sec
7	ethylbenzene	100.0 ppb	-No-	238.4 sec
8	m,p-xylene	200.0 ppb	-No-	255.4 sec
9	o-xylene	99.99 ppb	-No-	301.3 sec

- Detected 9 peaks. [405 sec]



ANALYSIS #18 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 10,95 11:09
SAMPLE TIME: AUG 10,95 11:02

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

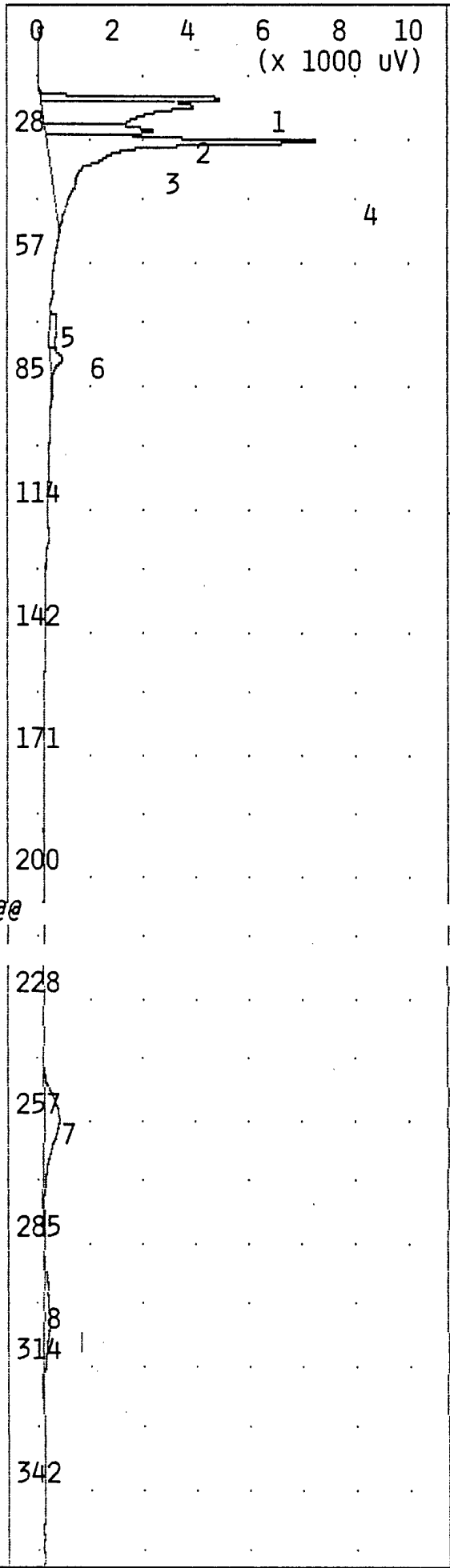
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	5.272	MVS	17.1
2	UNKNOWN	10.94	MVS	18.6
3	UNKNOWN	9.018	MVS	24.4
4	UNKNOWN	1.266	MVS	69.3
5	UNKNOWN	1.255	MV$	77.6
6	M,P-XYLENE	19.93	PPB	255.2
7	O-XYLENE	11.54	PPB	300.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #19 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 10,95 11:19
SAMPLE TIME: AUG 10,95 11:12

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

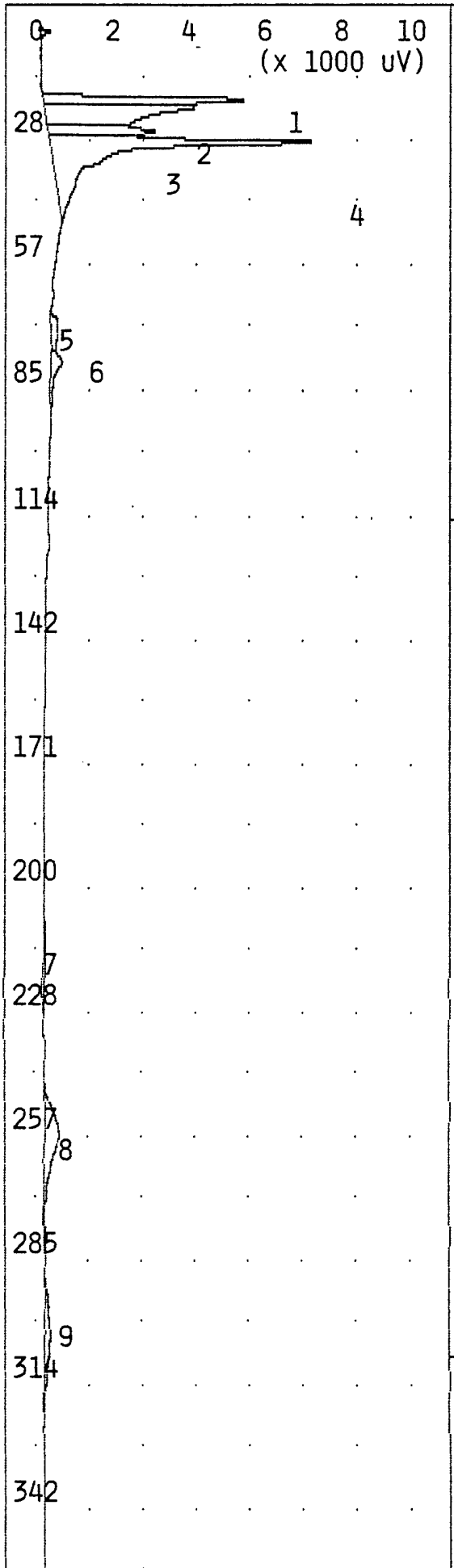
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	7.570	MVS	17.1
2	UNKNOWN	16.11	MVS	18.9
3	UNKNOWN	6.213	MVS	24.6
4	UNKNOWN	26.56	MVS	27.1
5	BENZENE	0.922	PPB	68.6
6	UNKNOWN	1.296	MVS	77.3
7	M,P-XYLENE	26.05	PPB	254.6
8	O-XYLENE	15.12	PPB	300.5

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
801-003BH RESHOT
1.5- 2.5 14G

ANALYSIS #20 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 10,95 11:29
SAMPLE TIME: AUG 10,95 11:22

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

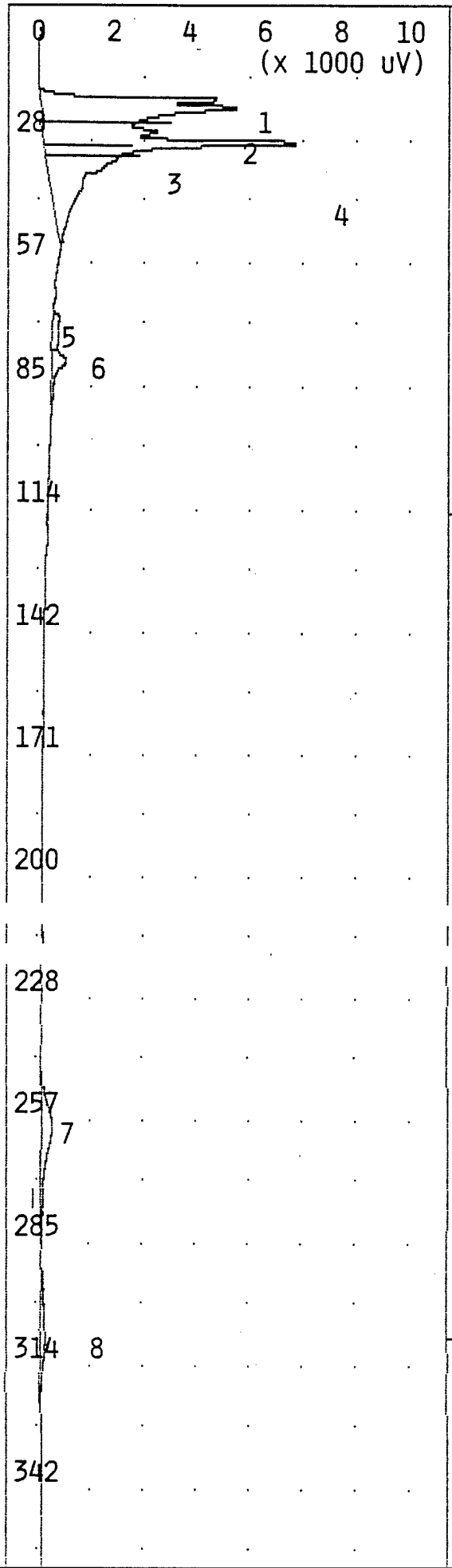
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	9.936	MVS	17.2
2	UNKNOWN	14.75	MVS	19.2
3	UNKNOWN	5.792	MVS	24.6
4	UNKNOWN	24.36	MVS	27.2
5	BENZENE	0.983	PPB	68.6
6	UNKNOWN	1.390	MVS	77.3
7	UNKNOWN	0.408	MVS	211.2
8	M,P-XYLENE	26.34	PPB	255.4
9	O-XYLENE	15.30	PPB	299.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
801-003BH RESHOT
4.0- 5.0 14G
150 MICROLITER INJECTION

ANALYSIS #21 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 10,95 11:39
SAMPLE TIME: AUG 10,95 11:32

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

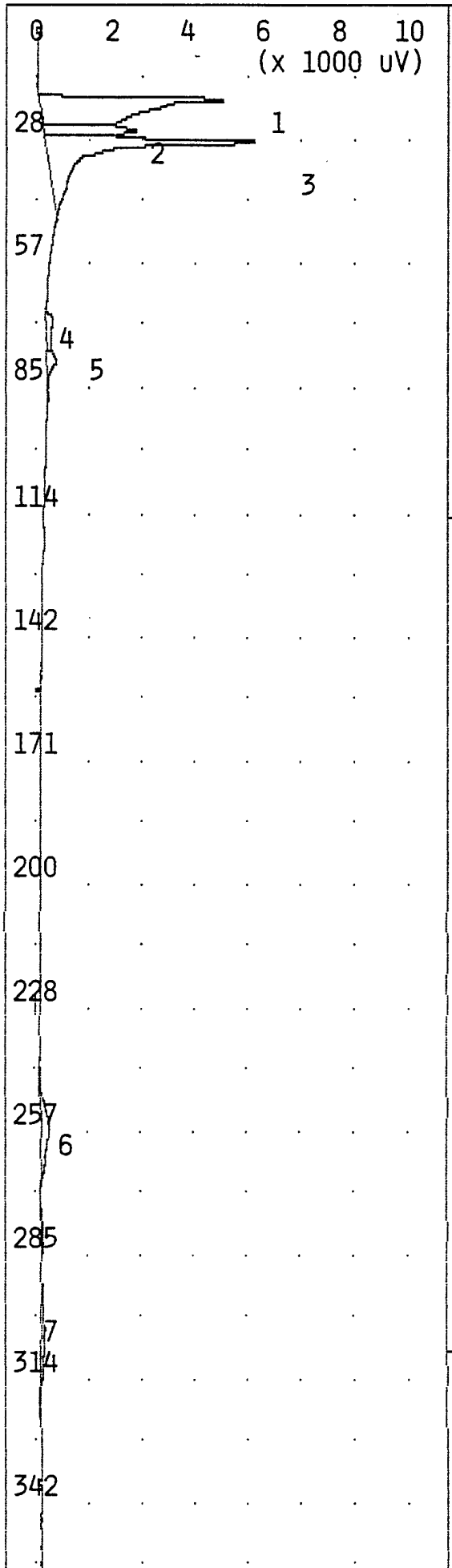
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	7.698 MVS	17.2
2	UNKNOWN	19.64 MVS	19.0
3	UNKNOWN	6.450 MVS	24.6
4	UNKNOWN	30.68 MVS	27.2
5	BENZENE	0.941 PPB	67.8
6	UNKNOWN	1.583 MVS	77.7
7	M,P-XYLENE	18.70 PPB	256.8
8	O-XYLENE	10.07 PPB	303.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
801-003BH RESHOT
9.0-10.0 20G

ANALYSIS #22 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 10,95 12:06
SAMPLE TIME: AUG 10,95 12:00

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

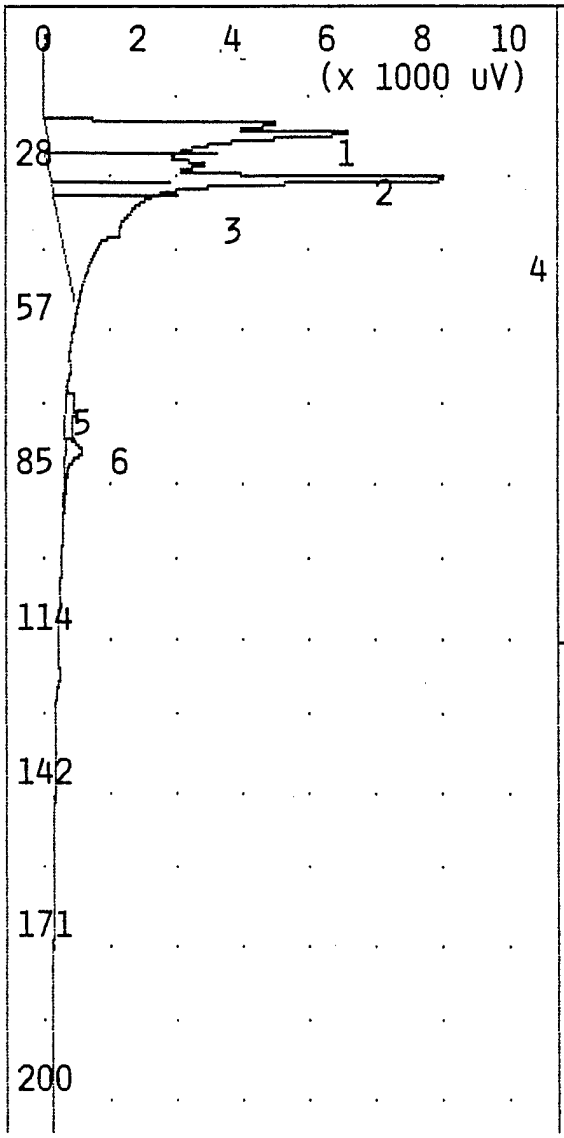
PEAK REPORT

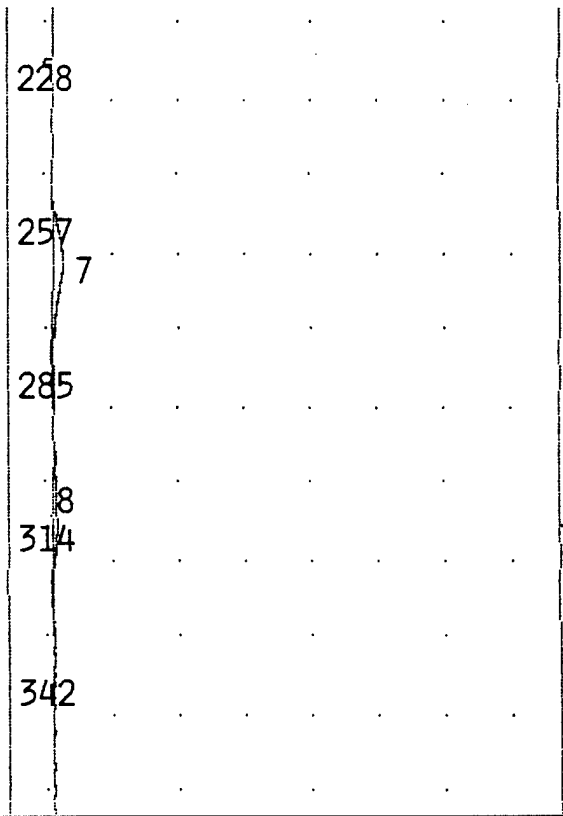
PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	21.42 MVS	17.2
2	UNKNOWN	5.125 MVS	24.5
3	UNKNOWN	18.77 MVS	27.2
4	BENZENE	0.983 PPB	69.0
5	UNKNOWN	1.170 MV$	77.4
6	M,P-XYLENE	15.66 PPB	254.4
7	O-XYLENE	9.929 PPB	300.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
801-001MW
2.0- 3.0 20G

ANALYSIS #23 10S+ GC FUNCTION ANALYSIS REPORT





TIME PRINTED: AUG 10,95 12:16
SAMPLE TIME: AUG 10,95 12:09

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

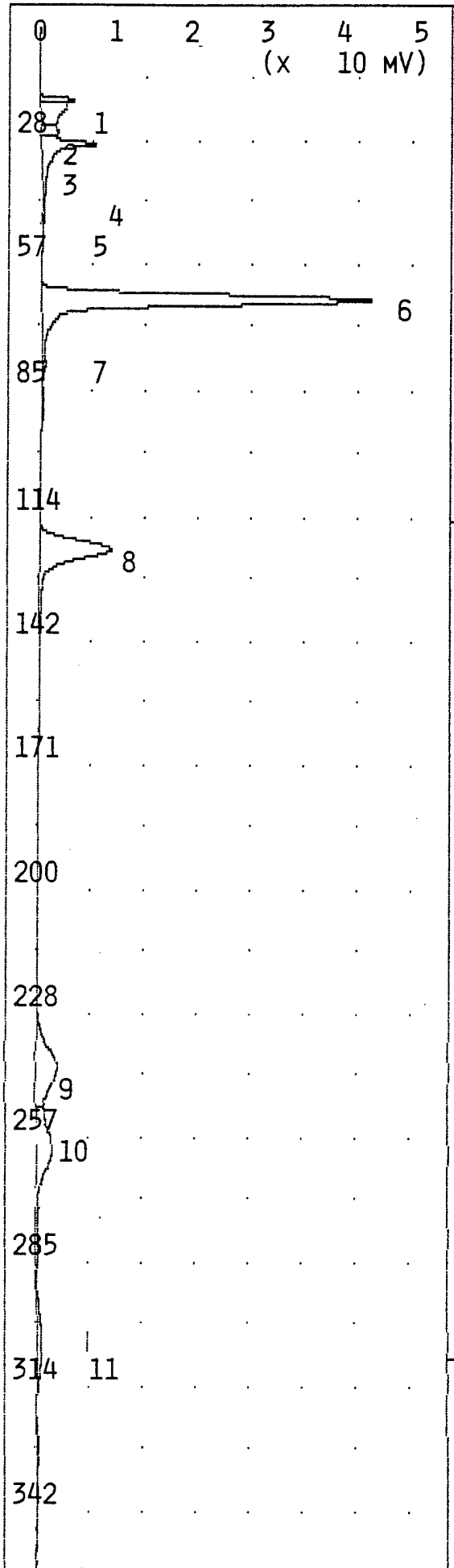
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	7.068	MVS	17.1
2	UNKNOWN	22.97	MVS	18.8
3	UNKNOWN	6.754	MVS	24.6
4	UNKNOWN	36.42	MVS	27.2
5	BENZENE	1.025	PPB	68.1
6	UNKNOWN	1.435	MVS	77.7
7	M,P-XYLENE	14.94	PPB	257.3
8	O-XYLENE	8.525	PPB	301.3

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
801-001MW
4.0- 5.0 23G

ANALYSIS #24 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED:	AUG 10,95	12:26
SAMPLE TIME:	AUG 10,95	12:19

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	6.978	MVS	17.2
2	UNKNOWN	14.54	MVS	19.0
3	UNKNOWN	4.818	MVS	24.6
4	UNKNOWN	23.77	MVS	27.4
5	UNKNOWN	0.043	MVS	39.6
6	BENZENE	99.64	PPB	63.3
7	UNKNOWN	0.612	MVS	78.0
8	TOLUENE	88.10	PPB	119.7
9	ETHYLBENZENE	78.59	PPB	239.0
10	M,P-XYLENE	139.7	PPB	256.8
11	O-XYLENE	71.95	PPB	303.2

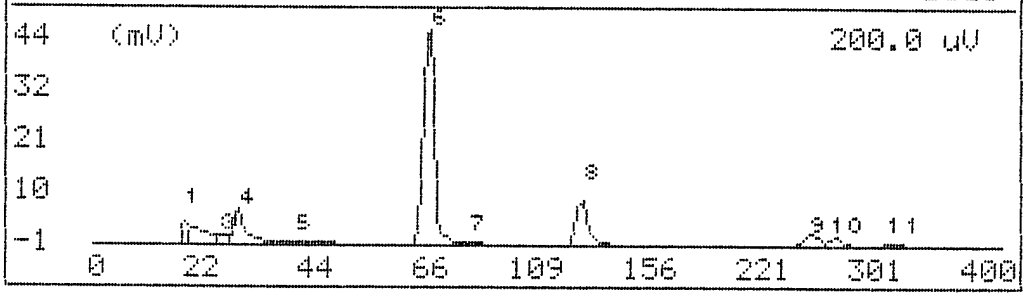
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

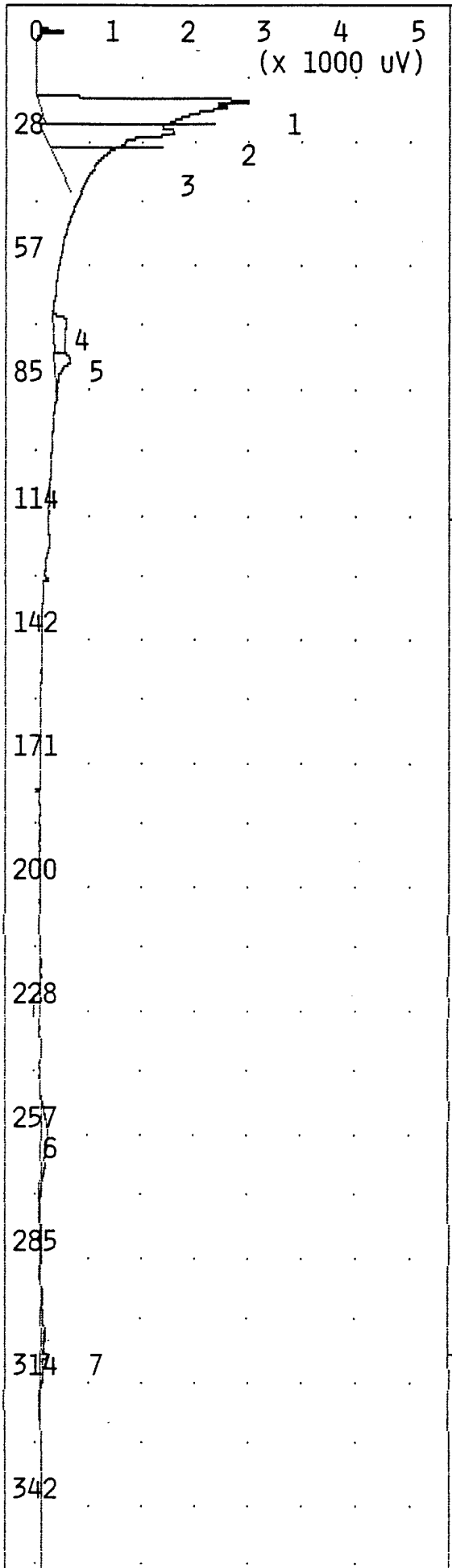
G.C. Ready 10S+ GC Function Aug 10,95 12:31
-- Analysis No 24 -- Run at - Aug 10,95 12:19 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	4.818 mVS	-No-	24.6 sec
4	Unknown	23.77 mVS	-No-	47.4 sec
5	Unknown	0.043 mVS	-No-	59.6 sec
6	benzene	99.99 ppb	-No-	63.3 sec
7	Unknown	0.612 mVS	-No-	70.0 sec
8	toluene	100.0 ppb	-No-	119.7 sec
9	ethylbenzene	99.99 ppb	-No-	239.0 sec
10	m,p-xylene	199.9 ppb	-No-	256.8 sec
11	o-xylene	100.0 ppb	-No-	303.2 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #25 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 10,95 12:38
SAMPLE TIME: AUG 10,95 12:32

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

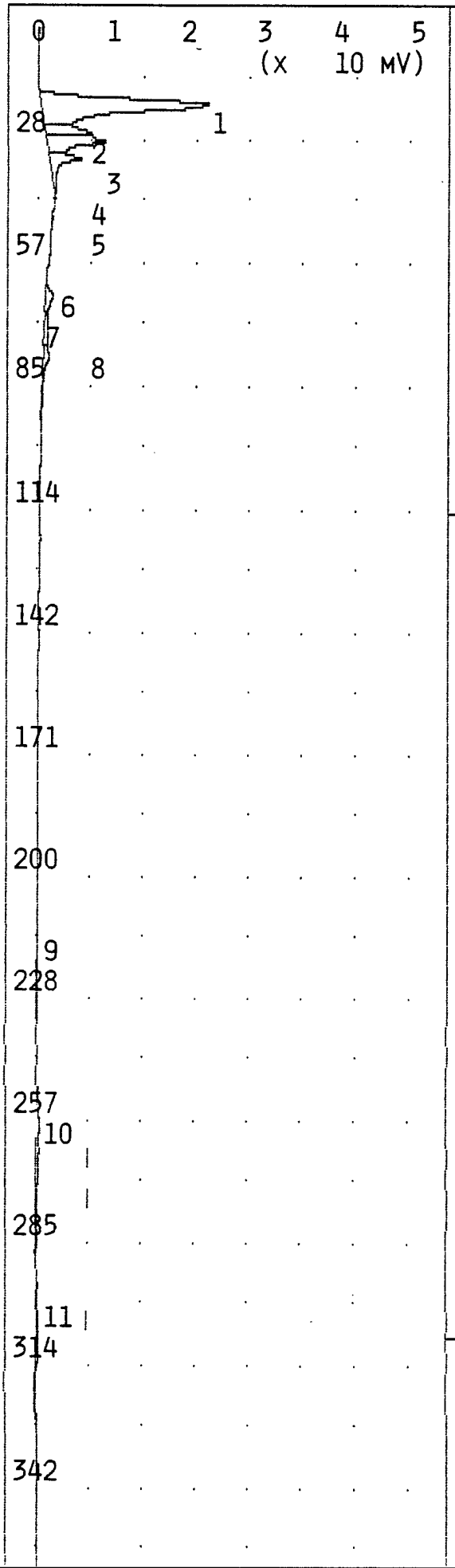
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	4.409	MVS	17.0
2	UNKNOWN	10.70	MVS	18.6
3	UNKNOWN	8.693	MVS	24.3
4	BENZENE	1.011	PPB	68.9
5	UNKNOWN	0.927	MVS	76.9
6	M,P-XYLENE	9.418	PPB	254.6
7	O-XYLENE	6.614	PPB	306.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
~~100 PPB BTEX~~ GB
AIR BLANK

ANALYSIS #26 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 10,95 12:48
SAMPLE TIME: AUG 10,95 12:41

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

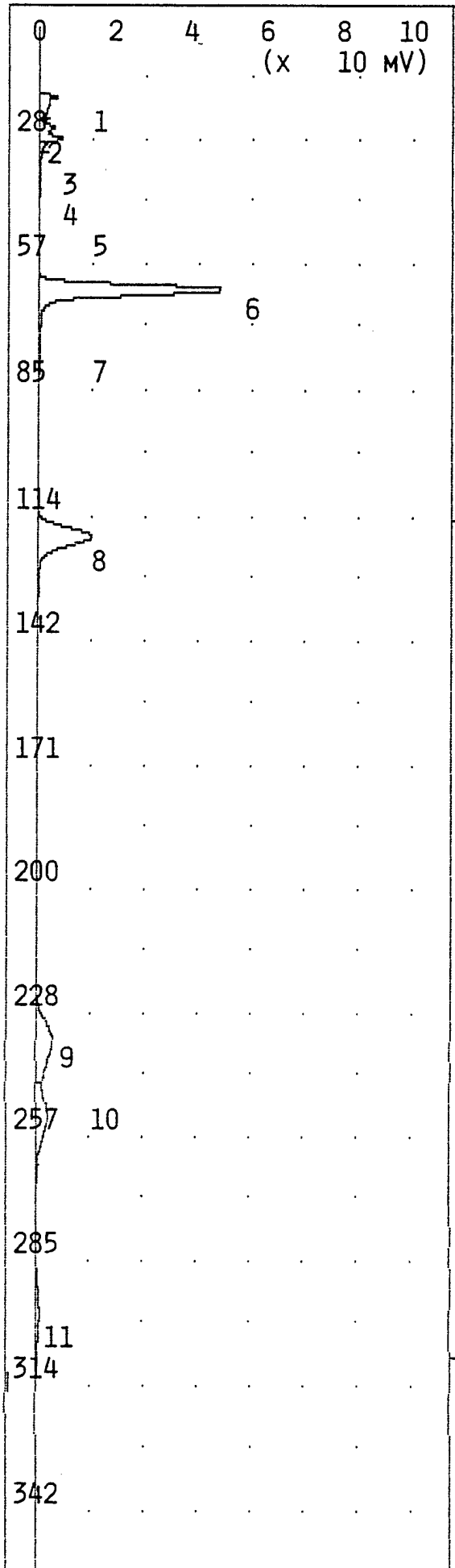
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	88.62 MVS	18.2
2	UNKNOWN	14.09 MVS	25.6
3	UNKNOWN	18.38 MVS	27.0
4	UNKNOWN	12.36 MVS	31.0
5	UNKNOWN	0.219 MVS	37.8
6	BENZENE	2.946 PPB	62.2
7	UNKNOWN	3.286 MVS	67.6
8	UNKNOWN	3.209 MVS	76.9
9	UNKNOWN	0.358 MVS	212.6
10	M,P-XYLENE	53.03 PPB	256.2
11	O-XYLENE	33.31 PPB	301.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
801-001MW
9.0-10.0 26G

ANALYSIS #2 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 11,95 08:07
SAMPLE TIME: AUG 11,95 08:00

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	32	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	6.685 MVS	16.7
2	UNKNOWN	10.89 MVS	18.3
3	UNKNOWN	8.199 MVS	24.1
4	UNKNOWN	16.56 MVS	26.4
5	UNKNOWN	0.411 MVS	36.3
6	UNKNOWN	147.8 MVS	61.2
7	UNKNOWN	0.227 MVS	76.0
8	UNKNOWN	74.66 MVS	116.9
9	UNKNOWN	54.48 MVS	233.8
10	UNKNOWN	43.97 MVS	250.9
11	UNKNOWN	16.01 MVS	296.0

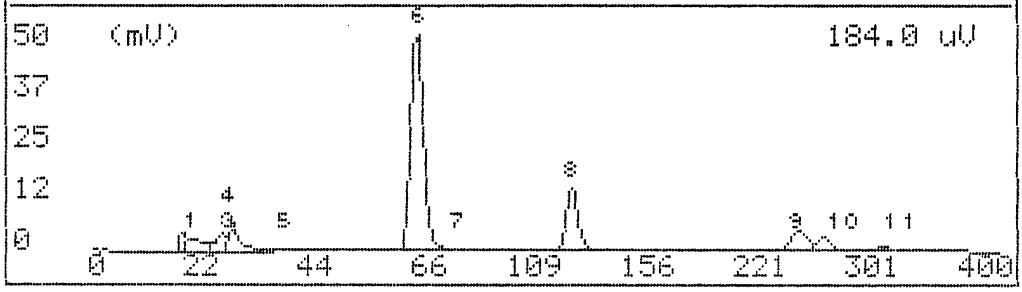
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANB
100 PPB BTEX

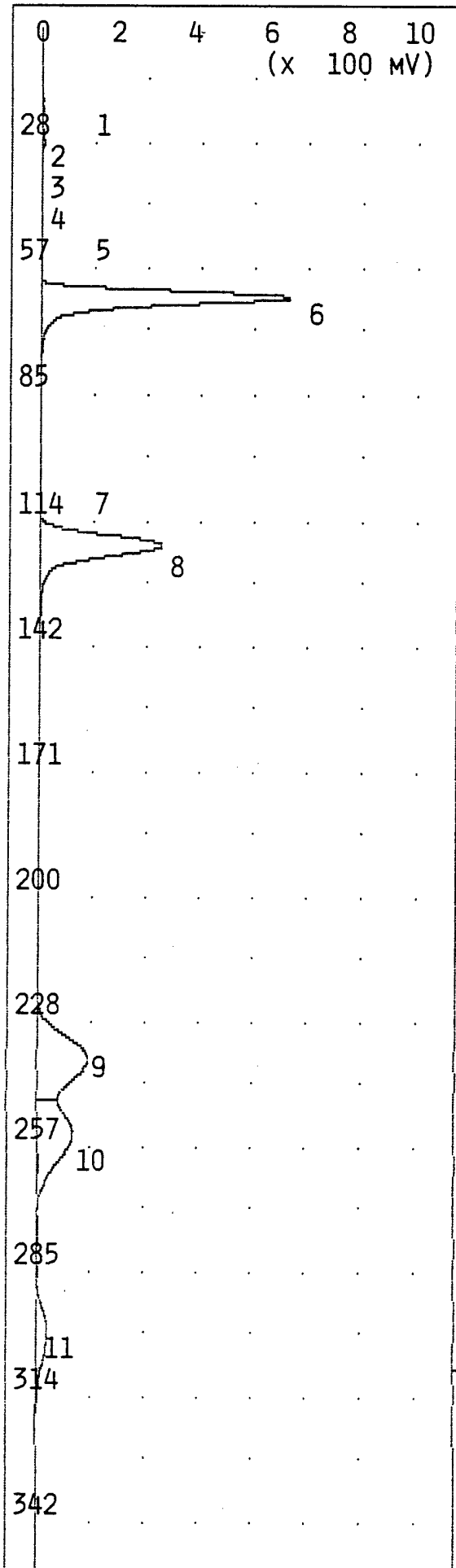
G.C. Ready 10S+ GC Function Aug 11,95 08:12
-- Analysis No 2 -- Run at - Aug 11,95 08:00 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	8.199 mVS	-No-	24.1 sec
4	Unknown	16.56 mVS	-No-	26.4 sec
5	Unknown	0.411 mVS	-No-	36.3 sec
6	benzene	100.0 ppb	-No-	61.2 sec
7	Unknown	0.227 mVS	-No-	76.0 sec
8	toluene	100.0 ppb	-No-	116.9 sec
9	ethylbenzene	100.0 ppb	-No-	233.8 sec
10	m,p-xylene	200.0 ppb	-No-	250.9 sec
11	o-xylene	100.0 ppb	-No-	296.0 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #3 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 11,95 08:21
SAMPLE TIME: AUG 11,95 08:14

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	5.400	MVS	16.8
2	UNKNOWN	14.06	MVS	18.6
3	UNKNOWN	8.437	MVS	24.3
4	UNKNOWN	25.95	MVS	26.8
5	UNKNOWN	0.049	MVS	36.8
6	BENZENE	1.758	PPM	61.9
7	UNKNOWN	0.175	MVS	107.0
8	TOLUENE	2.678	PPM	117.7
9	ETHYLBENZENE	3.175	PPM	235.2
10	M,P-XYLENE	6.361	PPM	252.5
11	O-XYLENE	3.230	PPM	297.8

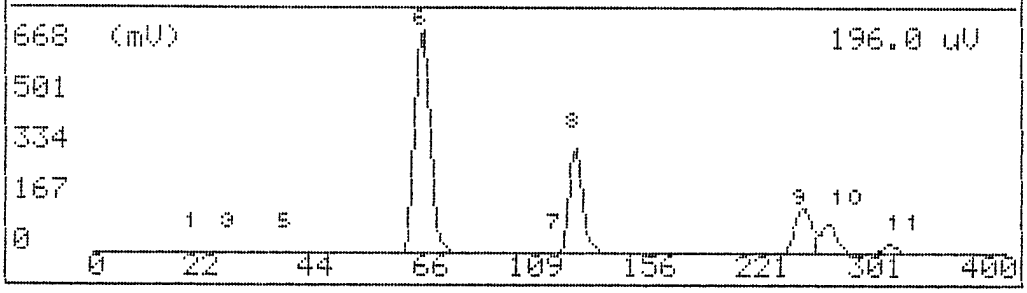
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANG
1 PPM BTEX

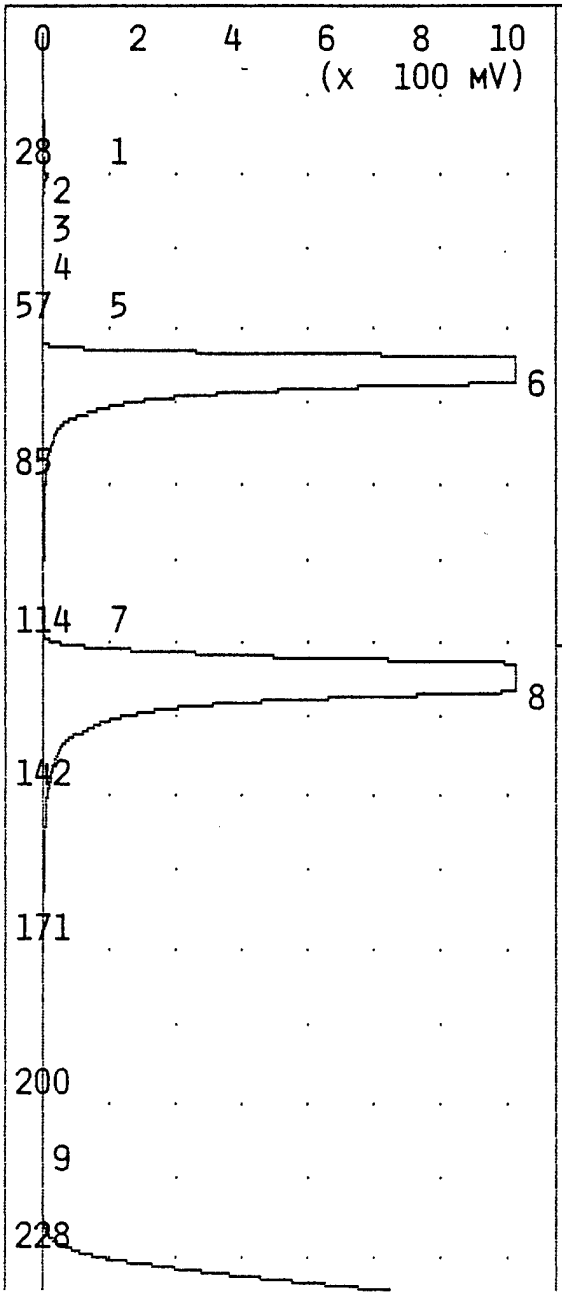
G.C. Ready 10S+ GC Function Aug 11,95 08:30
-- Analysis No 3 -- Run at - Aug 11,95 08:14 -

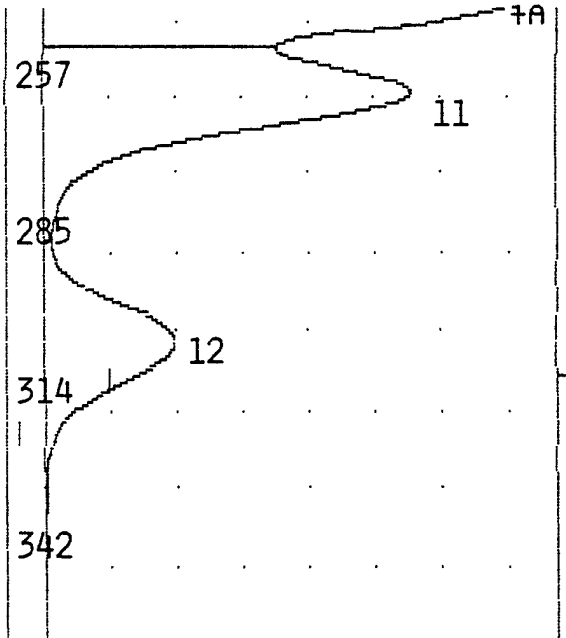
Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	8.437 mVS	-No-	24.3 sec
4	Unknown	25.95 mVS	-No-	26.8 sec
5	Unknown	0.049 mVS	-No-	36.8 sec
6	benzene	1.000 ppm	-No-	61.9 sec
7	Unknown	0.175 mVS	-No-	107.0 sec
8	toluene	1.000 ppm	-No-	117.7 sec
9	ethylbenzene	1.000 ppm	-No-	235.2 sec
10	m,p-xylene	2.000 ppm	-No-	252.5 sec
11	o-xylene	1.000 ppm	-No-	297.8 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #4 10S+ GC FUNCTION ANALYSIS REPORT





TIME PRINTED: AUG 11,95 08:59
SAMPLE TIME: AUG 11,95 08:53

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	6.920	MVS	17.0
2	UNKNOWN	20.30	MVS	18.7
3	UNKNOWN	11.07	MVS	24.5
4	UNKNOWN	29.51	MVS	27.0
5	UNKNOWN	0.776	MV$	37.0
6	BENZENE	4.978	PPM	62.7
7	UNKNOWN	2.849	MVS	107.3
8	TOLUENE	6.775	PPM	118.9
9	UNKNOWN	2.971	MVS	204.6
10	ETHYLBENZENE	7.183	PPM	236.8
11	M,P-XYLENE	16.44	PPM	254.4
12	O-XYLENE	9.116	PPM	299.7

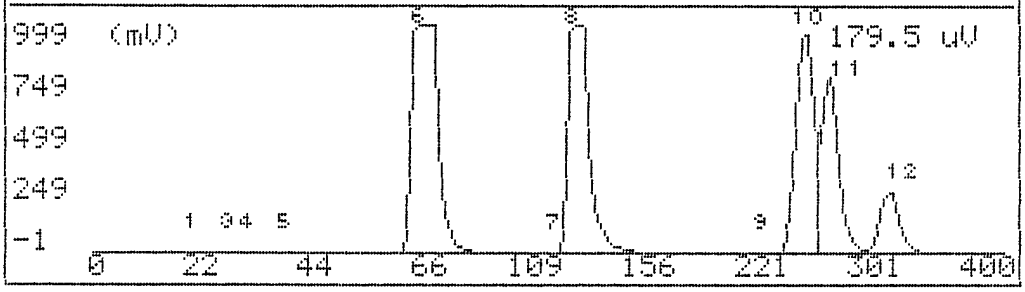
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANB
10 PPM BTEX

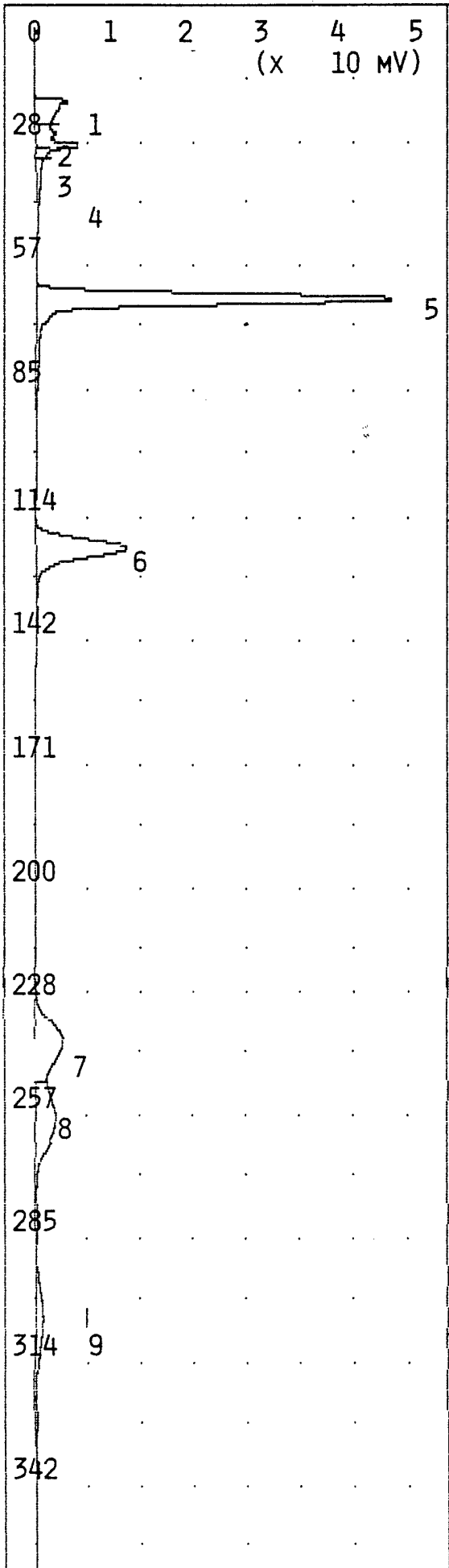
G.C. Ready 10S+ GC Function Aug 11,95 09:05
-- Analysis No 4 -- Run at - Aug 11,95 08:53 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
4	Unknown	29.51 mVS	-No-	27.0 sec
5	Unknown	0.776 mVS	-No-	37.0 sec
6	benzene	10.00 ppm	-No-	62.7 sec
7	Unknown	2.849 mVS	-No-	107.3 sec
8	toluene	10.00 ppm	-No-	118.9 sec
9	Unknown	2.971 mVS	-No-	204.6 sec
10	ethylbenzene	10.00 ppm	-No-	236.8 sec
11	m,p-xylene	20.00 ppm	-No-	254.4 sec
12	o-xylene	10.00 ppm	-No-	299.7 sec

- Detected 12 peaks. Use ↑ ↓ to scroll [405 secl



ANALYSIS #11 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 11,95 10:27
SAMPLE TIME: AUG 11,95 10:21

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	6.904	MVS	17.2
2	UNKNOWN	13.77	MVS	18.7
3	UNKNOWN	5.764	MVS	24.7
4	UNKNOWN	19.33	MVS	27.2
5	BENZENE	99.99	PPB	63.0
6	TOLUENE	86.95	PPB	119.4
7	ETHYLBENZENE	84.61	PPB	238.4
8	M,P-XYLENE	183.8	PPB	256.5
9	O-XYLENE	94.13	PPB	302.6

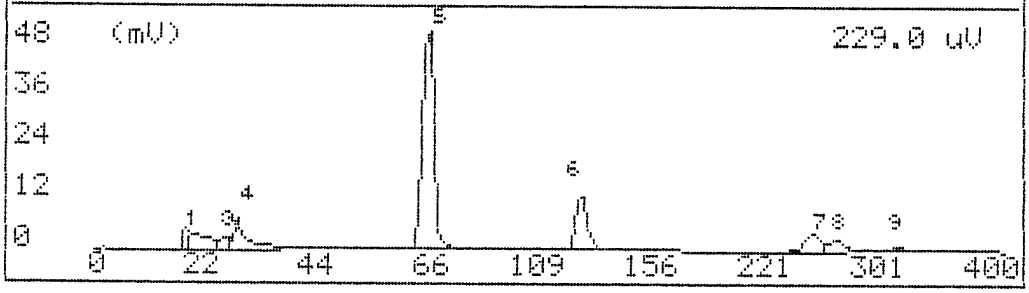
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANG
100 PPB BTEX

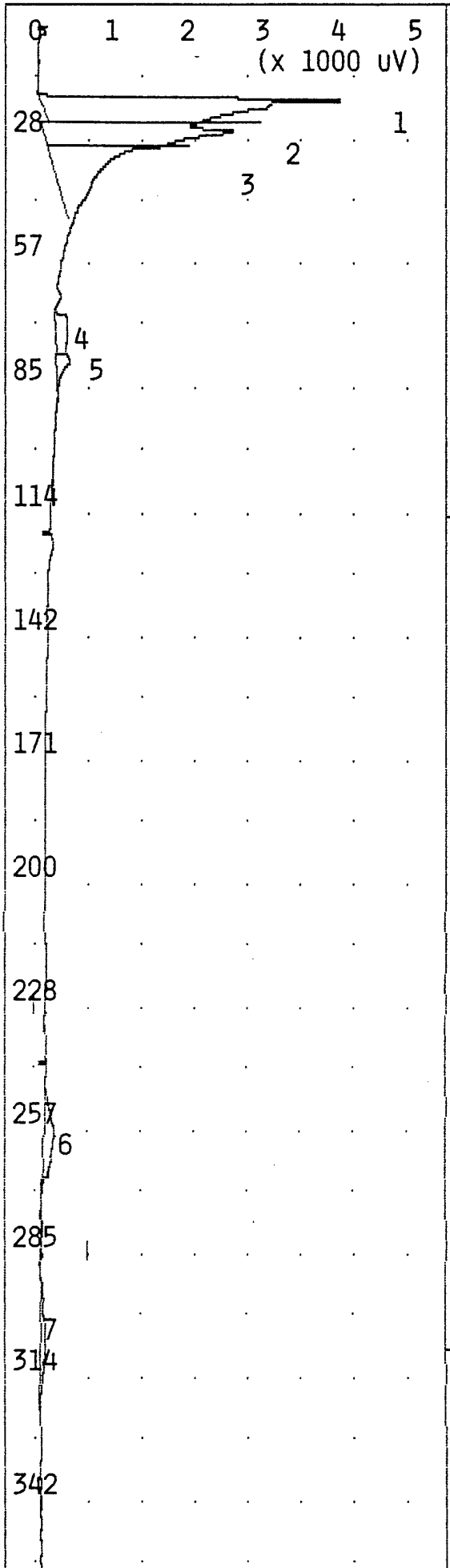
G.C. Ready 10S+ GC Function Aug 11,95 10:32
-- Analysis No 11 -- Run at - Aug 11,95 10:21 -

Pk No	Name	Conc/Area	Alarm	Ret. Time
1	Unknown	6.904 mVS	-No-	17.2 sec
2	Unknown	13.77 mVS	-No-	18.7 sec
3	Unknown	5.764 mVS	-No-	24.7 sec
4	Unknown	19.33 mVS	-No-	27.2 sec
5	benzene	100.0 ppb	-No-	63.0 sec
6	toluene	100.0 ppb	-No-	119.4 sec
7	ethylbenzene	100.0 ppb	-No-	238.4 sec
8	m,p-xylene	200.0 ppb	-No-	256.5 sec
9	o-xylene	100.0 ppb	-No-	302.6 sec

- Detected 9 peaks. [405 sec]



ANALYSIS #12 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 11,95 10:40
SAMPLE TIME: AUG 11,95 10:33

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

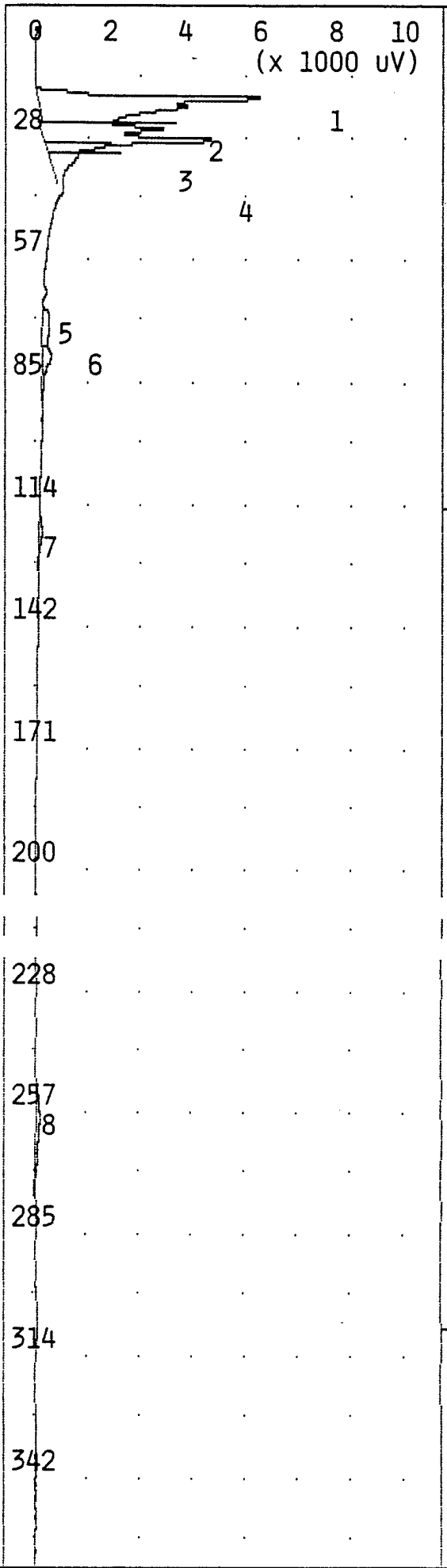
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	5.932 MVS	17.2
2	UNKNOWN	13.09 MVS	18.8
3	UNKNOWN	16.20 MVS	24.8
4	BENZENE	1.004 PPB	68.1
5	UNKNOWN	0.824 MV$	77.3
6	M,P-XYLENE	7.660 PPB	259.2
7	O-XYLENE	5.192 PPB	302.1

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #13 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 11,95 11:10
SAMPLE TIME: AUG 11,95 11:03

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

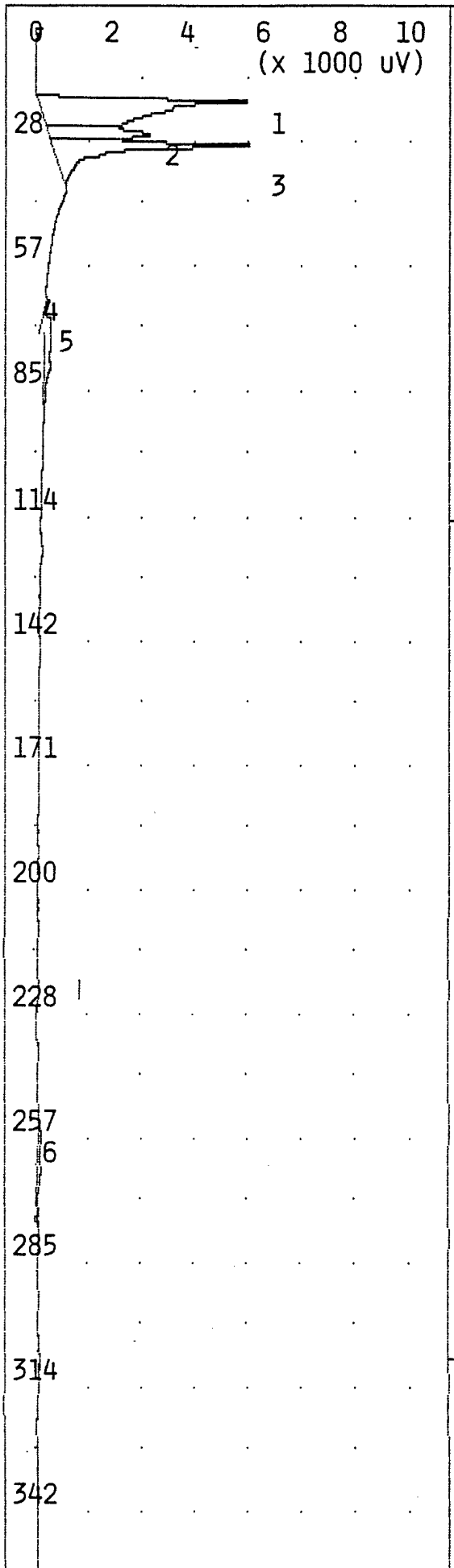
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	12.88 MVS	17.1
2	UNKNOWN	12.78 MVS	19.4
3	UNKNOWN	6.326 MVS	24.6
4	UNKNOWN	12.20 MVS	27.2
5	BENZENE	0.974 PPB	68.0
6	UNKNOWN	1.234 MVS	77.8
7	TOLUENE	0.831 PPB	119.0
8	M,P-XYLENE	6.155 PPB	255.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
873-001MW
2.0- 3.0 14G

ANALYSIS #14 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 11,95 11:20
SAMPLE TIME: AUG 11,95 11:13

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

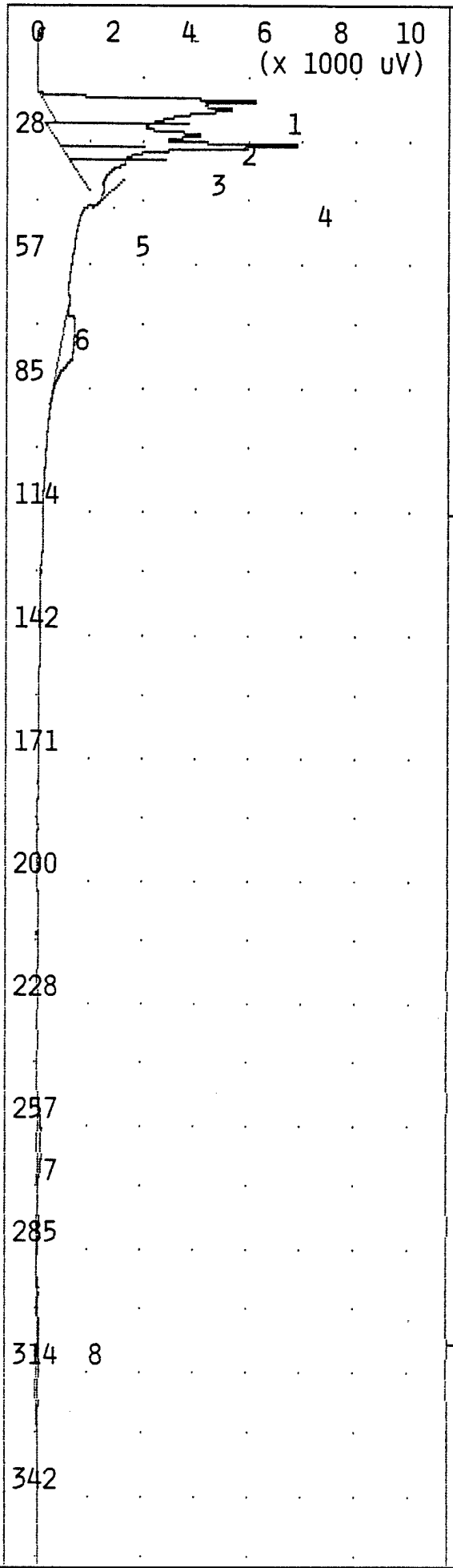
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	23.11	MVS	17.5
2	UNKNOWN	6.115	MVS	25.0
3	UNKNOWN	12.71	MVS	27.6
4	BENZENE	0.027	PPB	63.6
5	UNKNOWN	2.183	MVS	68.0
6	M,P-XYLENE	6.085	PPB	257.3

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
873-001MW
4.0- 5.0 14G

ANALYSIS #15 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 11,95 11:30
SAMPLE TIME: AUG 11,95 11:23

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

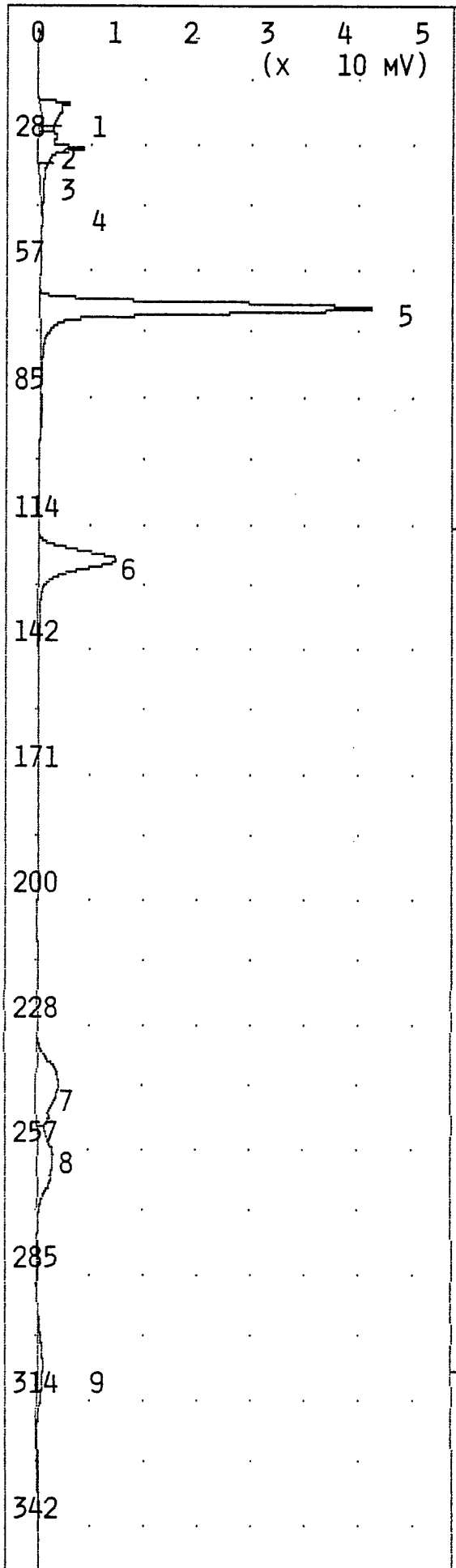
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	9.325	MVS	17.5
2	UNKNOWN	18.43	MVS	19.1
3	UNKNOWN	8.371	MVS	25.1
4	UNKNOWN	16.94	MVS	27.6
5	UNKNOWN	0.182	MV$	31.6
6	BENZENE	2.631	PPB	68.4
7	M,P-XYLENE	7.845	PPB	260.8
8	O-XYLENE	4.720	PPB	306.9

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
873-001MW
9.0-10.0 17G

ANALYSIS #16 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 11,95 11:58
SAMPLE TIME: AUG 11,95 11:51

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

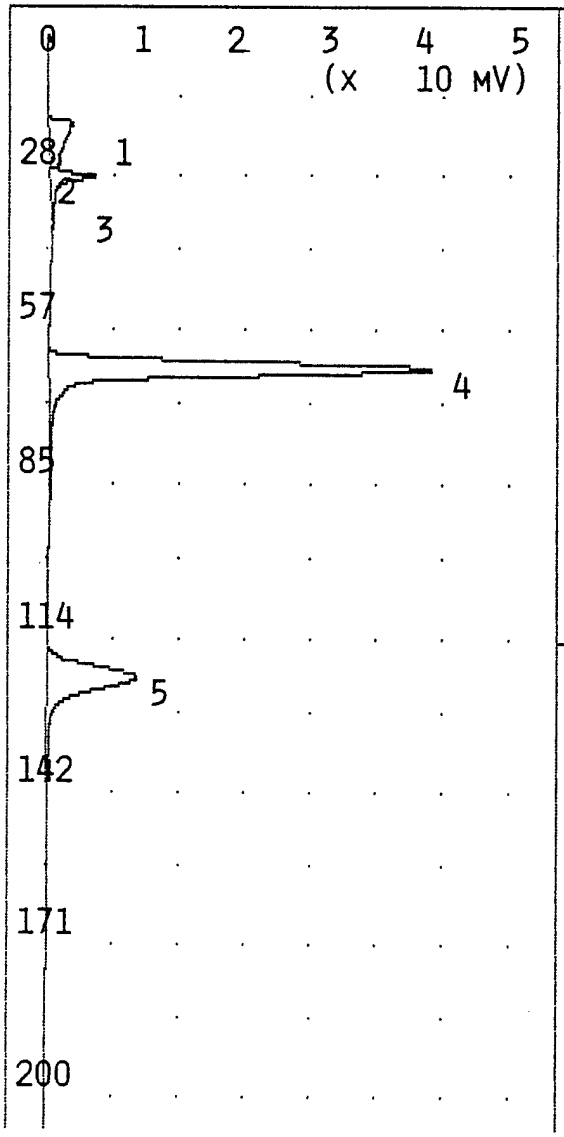
PEAK REPORT

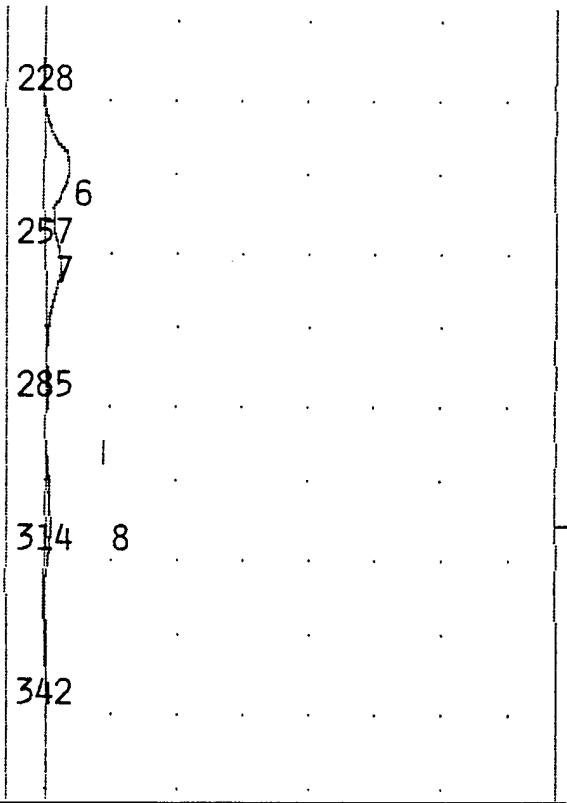
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	5.998	MVS	17.3
2	UNKNOWN	13.37	MVS	18.8
3	UNKNOWN	4.919	MVS	24.8
4	UNKNOWN	18.11	MVS	27.5
5	BENZENE	92.38	PPB	63.8
6	TOLUENE	84.97	PPB	120.4
7	ETHYLBENZENE	80.70	PPB	240.0
8	M,P-XYLENE	142.7	PPB	257.6
9	O-XYLENE	73.84	PPB	304.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANG
100 PPB BTEX

ANALYSIS #1 10S+ GC FUNCTION ANALYSIS REPORT





TIME PRINTED: AUG 11,95 12:57
SAMPLE TIME: AUG 11,95 12:50

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	32	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	15.57 MVS	17.1
2	UNKNOWN	0.314 MVS	24.4
3	UNKNOWN	10.39 MVS	27.0
4	UNKNOWN	125.0 MVS	62.6
5	UNKNOWN	51.39 MVS	119.7
6	UNKNOWN	32.50 MVS	239.2
7	UNKNOWN	23.79 MVS	257.3
8	UNKNOWN	10.44 MVS	304.2

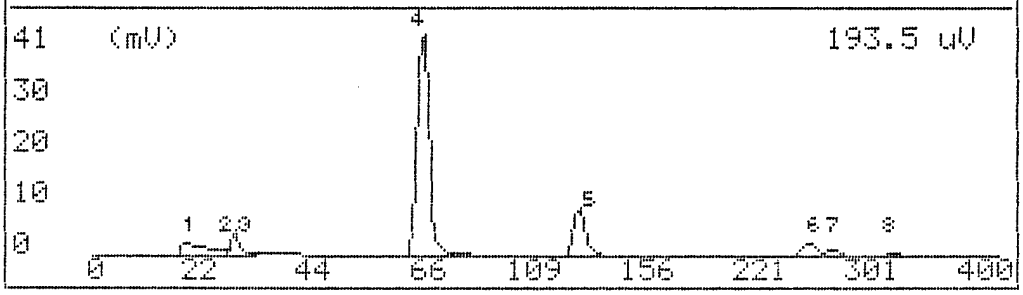
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

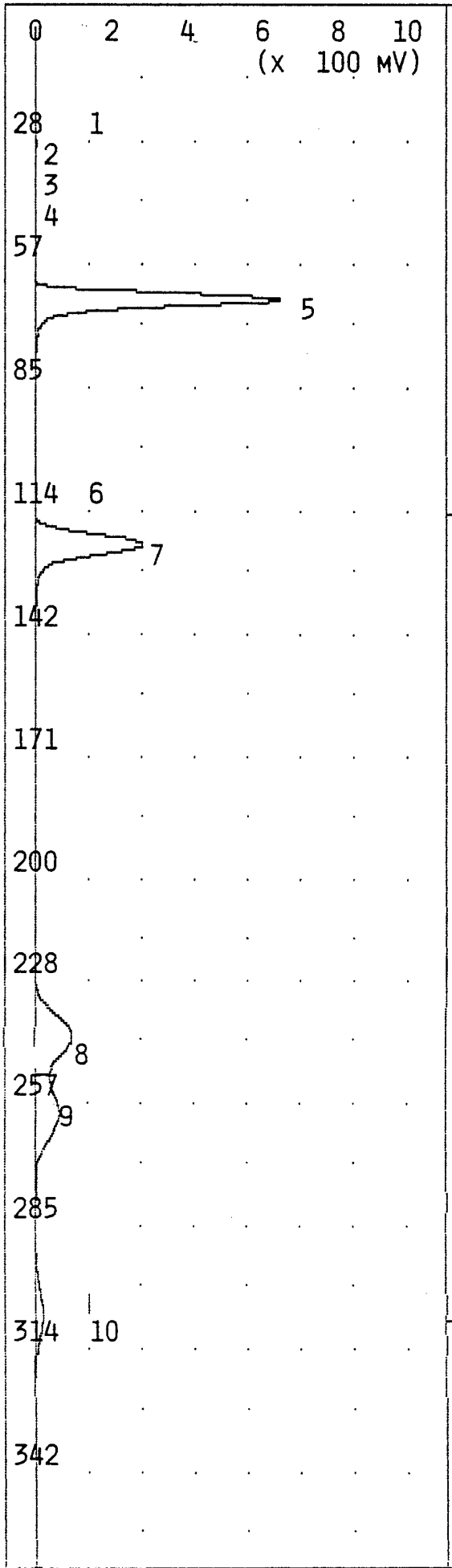
G.C. Ready 10S+ GC Function Aug 11,95 13:03
-- Analysis No 1 -- Run at - Aug 11,95 12:50 -

Pk No	Name	Conc/Area		Alarm	Ret.Time
1	Unknown	15.57	mVS	-No-	17.1 sec
2	Unknown	0.314	mVS	-No-	24.4 sec
3	Unknown	10.39	mVS	-No-	27.0 sec
4	benzene	100.0	ppb	-No-	62.6 sec
5	toluene	100.0	ppb	-No-	119.7 sec
6	ethylbenzene	100.0	ppb	-No-	239.2 sec
7	m,p-xylene	200.0	ppb	-No-	257.3 sec
8	o-xylene	100.0	ppb	-No-	304.2 sec

- Detected 8 peaks. [405 sec]



ANALYSIS #2 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 11,95 13:11
SAMPLE TIME: AUG 11,95 13:04

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	3.845	MVS	17.2
2	UNKNOWN	11.14	MVS	18.9
3	UNKNOWN	3.842	MVS	24.6
4	UNKNOWN	18.11	MVS	27.2
5	BENZENE	2.031	PPM	63.4
6	UNKNOWN	0.173	MVS	107.7
7	TOLUENE	3.385	PPM	120.1
8	ETHYLBENZENE	3.838	PPM	239.8
9	M,P-XYLENE	8.119	PPM	257.3
10	O-XYLENE	3.501	PPM	303.7

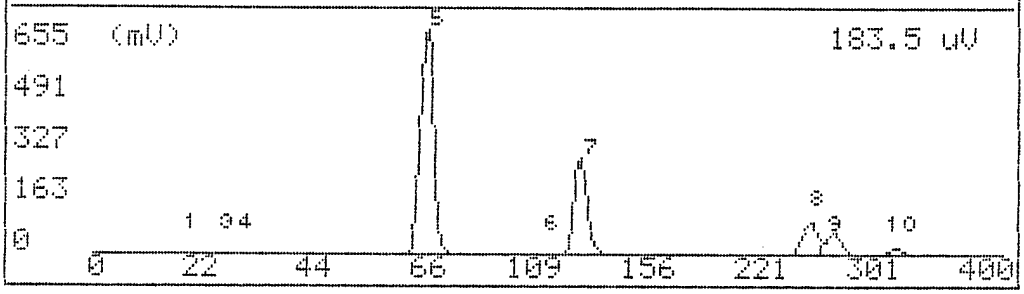
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
1 PPM BTEX

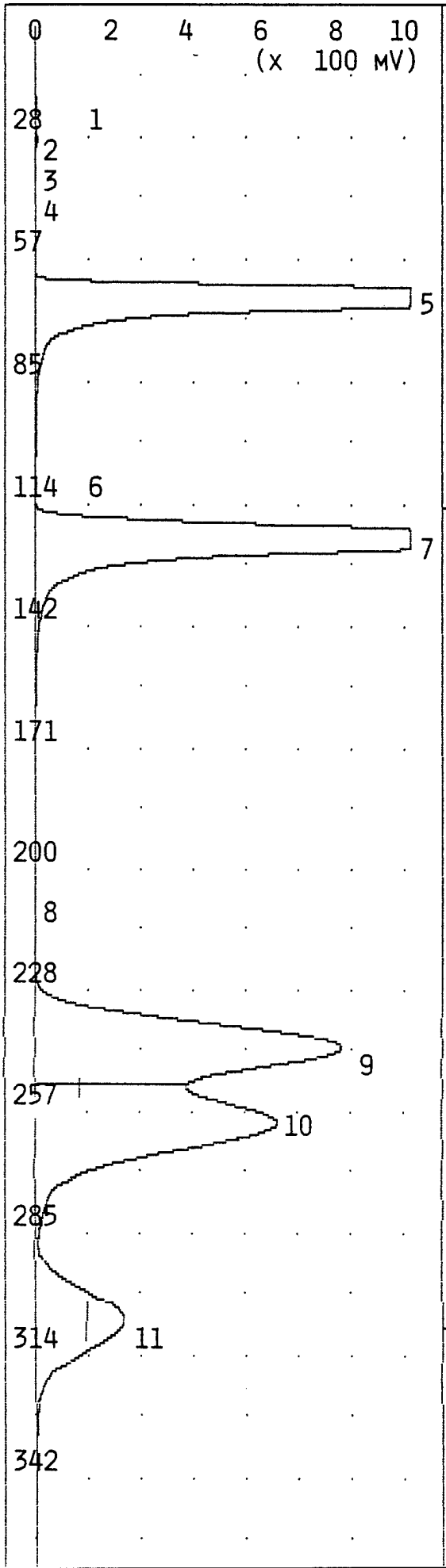
G.C. Ready 10S+ GC Function Aug 11,95 13:16
-- Analysis No 2 -- Run at - Aug 11,95 13:04 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
2	Unknown	11.14 mVS	-No-	18.9 sec
3	Unknown	3.842 mVS	-No-	24.6 sec
4	Unknown	18.11 mVS	-No-	27.2 sec
5	benzene	1.000 ppm	-No-	63.4 sec
6	Unknown	0.173 mVS	-No-	107.7 sec
7	toluene	1.000 ppm	-No-	120.1 sec
8	ethylbenzene	1.000 ppm	-No-	239.8 sec
9	m,p-xylene	2.000 ppm	-No-	257.3 sec
10	o-xylene	1.000 ppm	-No-	303.7 sec

- Detected 10 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #3 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 11,95 13:24
SAMPLE TIME: AUG 11,95 13:18

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	4.829 MVS	17.3
2	UNKNOWN	20.75 MVS	19.0
3	UNKNOWN	6.850 MVS	24.8
4	UNKNOWN	42.26 MVS	27.4
5	BENZENE	4.712 PPM	63.4
6	UNKNOWN	2.528 MVS	107.7
7	TOLUENE	7.048 PPM	120.4
8	UNKNOWN	1.307 MVS	207.8
9	ETHYLBENZENE	8.308 PPM	240.0
10	M,P-XYLENE	19.48 PPM	257.6
11	O-XYLENE	10.53 PPM	304.0

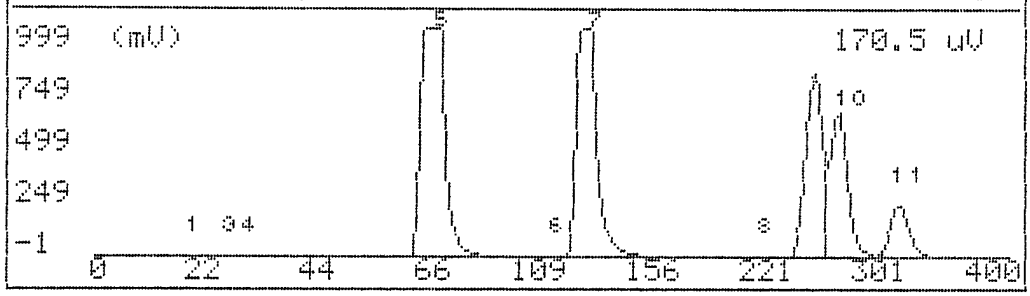
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANG
10 PPM BTEX

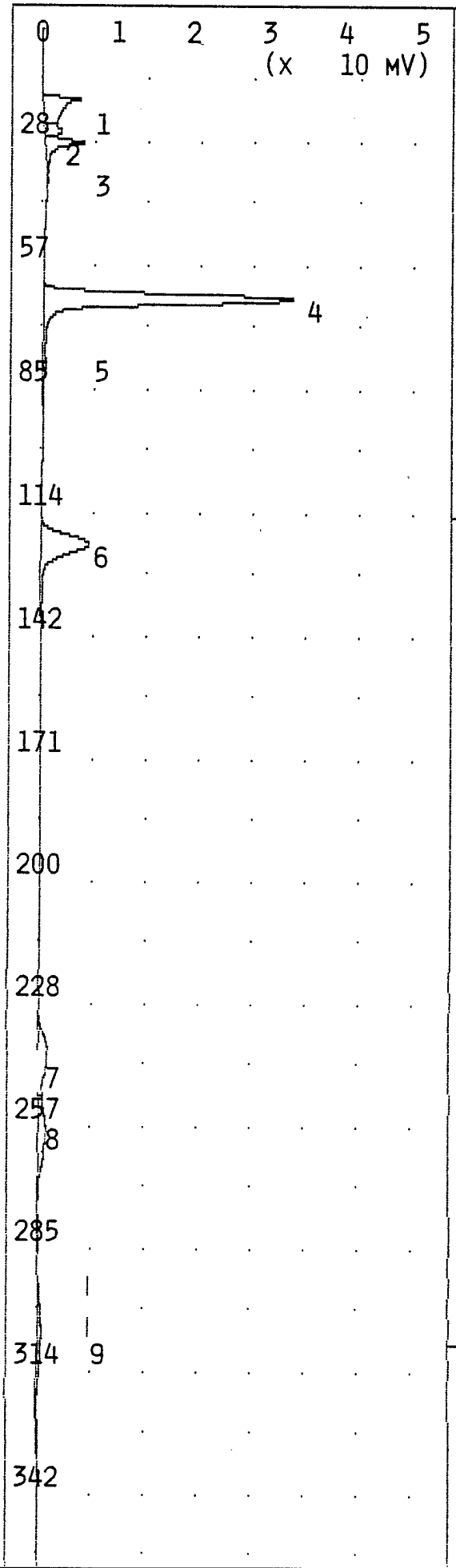
G.C. Ready 10S+ GC Function Aug 11,95 13:29
-- Analysis No 3 -- Run at - Aug 11,95 13:18 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	6.850 mVS	-No-	24.8 sec
4	Unknown	42.26 mVS	-No-	27.4 sec
5	benzene	10.00 ppm	-No-	63.4 sec
6	Unknown	2.528 mVS	-No-	107.7 sec
7	toluene	10.00 ppm	-No-	120.4 sec
8	Unknown	1.307 mVS	-No-	207.8 sec
9	ethylbenzene	10.00 ppm	-No-	240.0 sec
10	m,p-xylene	20.00 ppm	-No-	257.6 sec
11	o-xylene	10.00 ppm	-No-	304.0 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #10 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 11,95 16:17
SAMPLE TIME: AUG 11,95 16:10

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	19.28	MVS	16.8
2	UNKNOWN	4.931	MVS	24.2
3	UNKNOWN	11.88	MVS	26.9
4	BENZENE	78.84	PPB	62.8
5	UNKNOWN	0.531	MVS	77.7
6	TOLUENE	65.15	PPB	119.4
7	ETHYLBENZENE	48.90	PPB	238.8
8	M,P-XYLENE	129.5	PPB	257.0
9	O-XYLENE	76.05	PPB	303.2

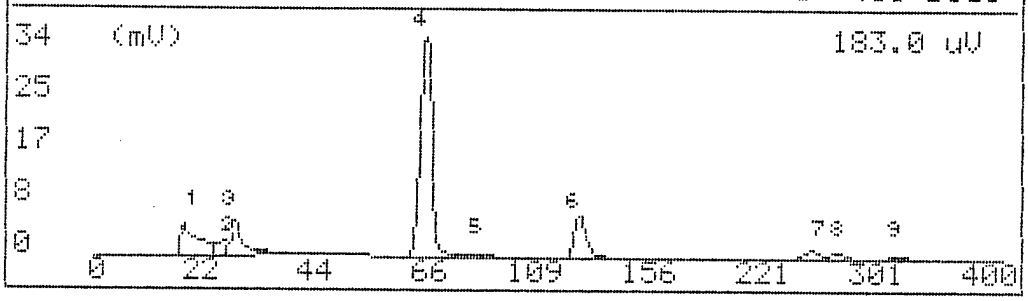
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANB
100 PPB BTEX

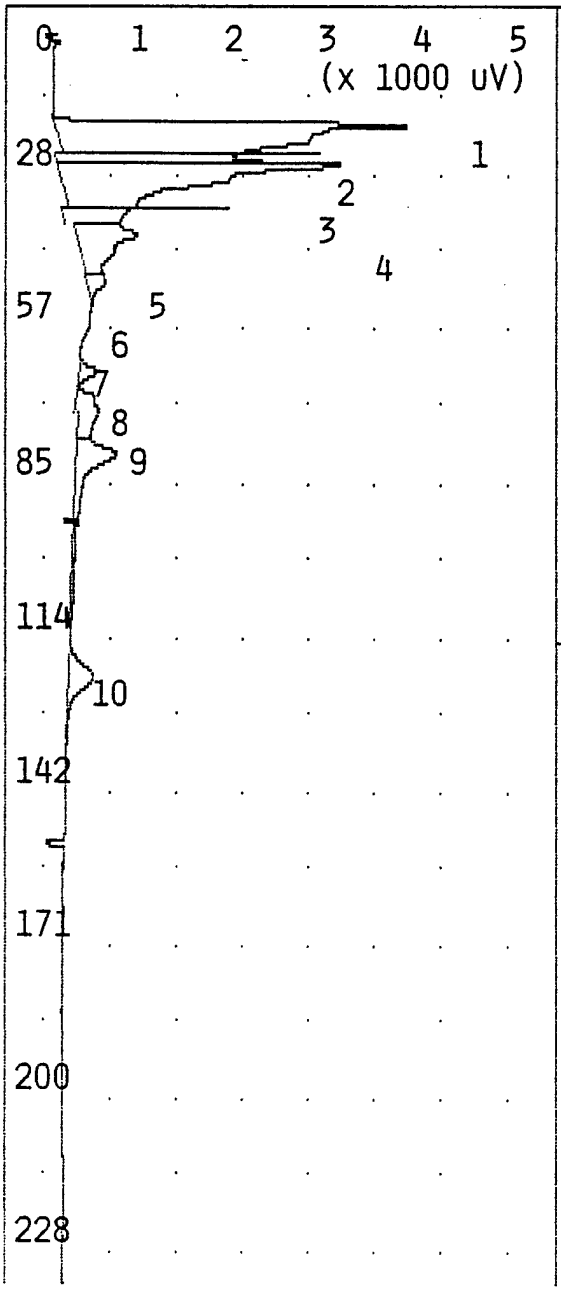
G.C. Ready 10S+ GC Function Aug 11,95 16:21
-- Analysis No 10 -- Run at - Aug 11,95 16:10 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
1	Unknown	19.28 mVS	-No-	16.8 sec
2	Unknown	4.931 mVS	-No-	24.2 sec
3	Unknown	11.88 mVS	-No-	26.9 sec
4	benzene	99.99 ppb	-No-	62.8 sec
5	Unknown	0.531 mVS	-No-	77.7 sec
6	toluene	100.0 ppb	-No-	119.4 sec
7	ethylbenzene	100.0 ppb	-No-	238.8 sec
8	m,p-xylene	199.9 ppb	-No-	257.0 sec
9	o-xylene	99.99 ppb	-No-	303.2 sec

- Detected 9 peaks. [405 secl



ANALYSIS #11 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 11,95 16:28
SAMPLE TIME: AUG 11,95 16:22

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

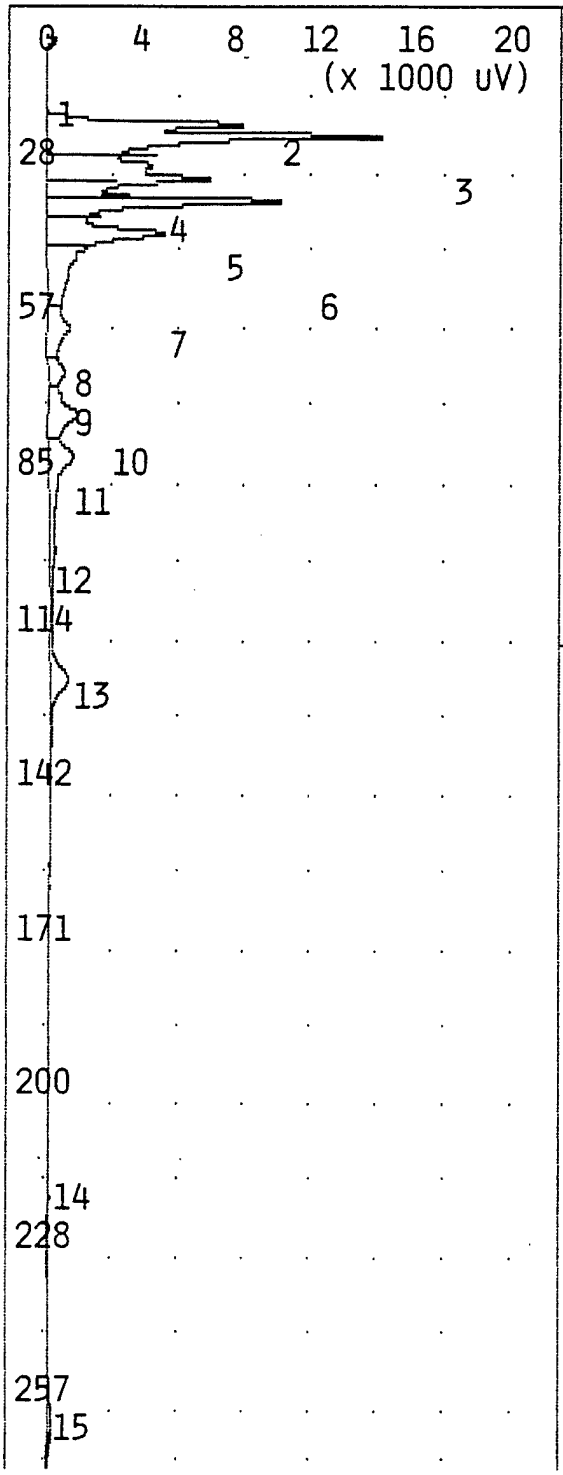
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	5.969	MVS	17.2
2	UNKNOWN	3.960	MVS	18.7
3	UNKNOWN	8.783	MVS	20.2
4	UNKNOWN	16.01	MVS	24.8
5	UNKNOWN	3.535	MVS	37.9
6	UNKNOWN	0.652	MVS	46.8
7	BENZENE	0.439	PPB	63.1
8	UNKNOWN	1.529	MVS	70.1
9	UNKNOWN	2.690	MVS	78.6
10	TOLUENE	4.473	PPB	119.6
11	M,P-XYLENE	28.00	PPB	257.0
12	O-XYLENE	11.76	PPB	301.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANB
AIR BLANK

ANALYSIS #12 10S+ GC FUNCTION ANALYSIS REPORT



LH

TIME PRINTED: AUG 11,95 16:38
SAMPLE TIME: AUG 11,95 16:32

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

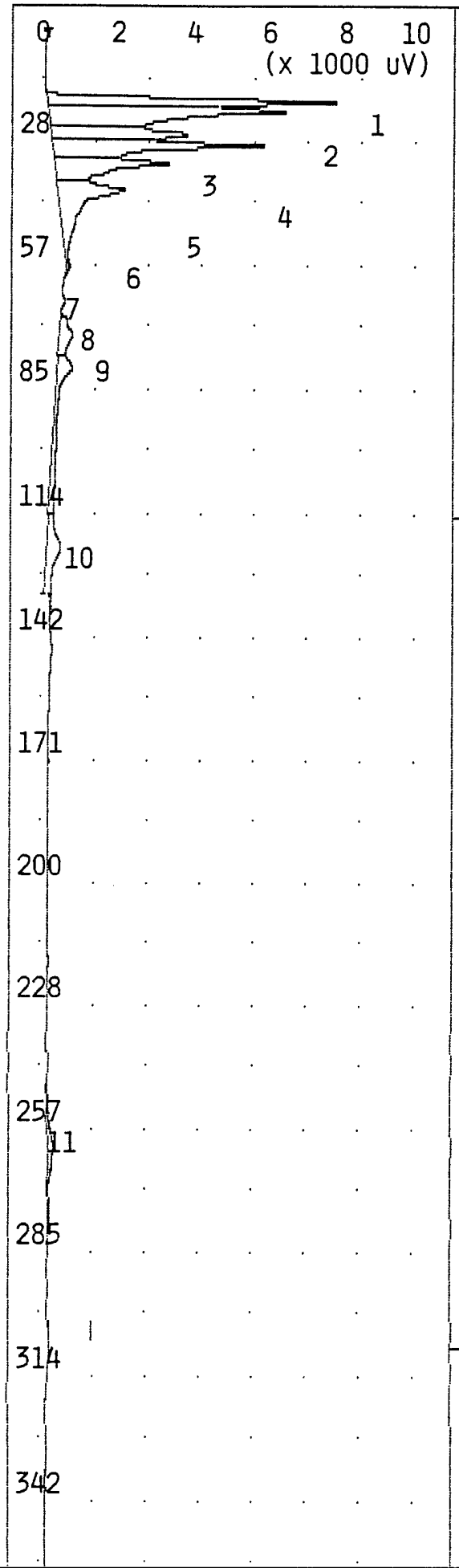
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.227	MVS	13.4
2	UNKNOWN	15.44	MVS	17.2
3	UNKNOWN	35.57	MVS	19.6
4	UNKNOWN	10.35	MVS	24.9
5	UNKNOWN	16.85	MVS	27.4
6	UNKNOWN	23.69	MVS	31.5
7	UNKNOWN	26.32	MVS	37.6
8	UNKNOWN	5.990	MVS	55.2
9	BENZENE	3.062	PPB	63.4
10	UNKNOWN	7.095	MVS	71.0
11	UNKNOWN	11.49	MVS	78.5
12	UNKNOWN	0.007	MVS	96.4
13	TOLUENE	15.94	PPB	119.6
14	ETHYLBENZENE	2.862	PPB	215.8
15	M,P-XYLENE	20.86	PPB	258.4
16	O-XYLENE	11.61	PPB	302.9

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-002MW
15.0' 17G

ANALYSIS #13 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 11,95 16:56
SAMPLE TIME: AUG 11,95 16:49

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

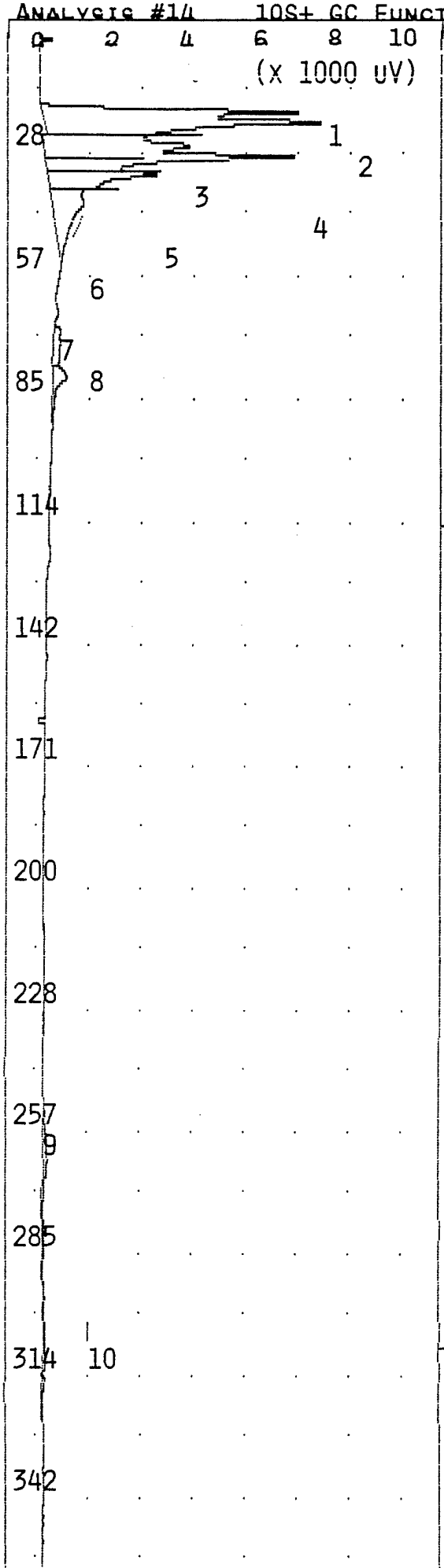
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	15.52	MVS	17.6
2	UNKNOWN	19.19	MVS	19.6
3	UNKNOWN	8.567	MVS	25.0
4	UNKNOWN	13.06	MVS	27.5
5	UNKNOWN	9.530	MVS	31.6
6	UNKNOWN	10.01	MVS	37.4
7	UNKNOWN	0.114	MVS	55.7
8	UNKNOWN	2.193	MVS	71.3
9	UNKNOWN	4.213	MVS	78.9
10	TOLUENE	10.67	PPB	120.1
11	M,P-XYLENE	27.11	PPB	259.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-002MW
17.0' 23G

ANALYSIS #14 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED:	AUG 11,95	17:06
SAMPLE TIME:	AUG 11,95	16:59

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

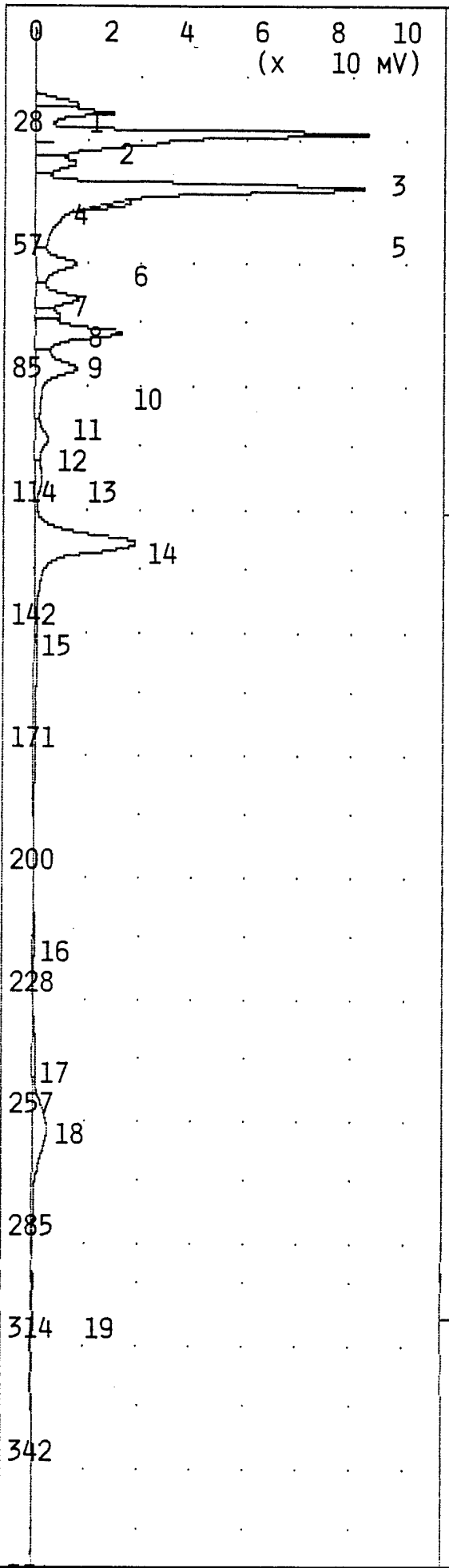
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	11.69	MVS	17.4
2	UNKNOWN	23.98	MVS	19.6
3	UNKNOWN	9.117	MVS	25.0
4	UNKNOWN	15.45	MVS	27.6
5	UNKNOWN	15.11	MVS	31.6
6	UNKNOWN	0.254	MVS	38.6
7	BENZENE	1.437	PPB	68.0
8	UNKNOWN	1.504	MVS	78.6
9	M,P-XYLENE	21.71	PPB	259.2
10	O-XYLENE	11.46	PPB	304.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-002MW
20.0' 23G

ANALYSIS #15 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 11,95 17:16
SAMPLE TIME: AUG 11,95 17:09

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

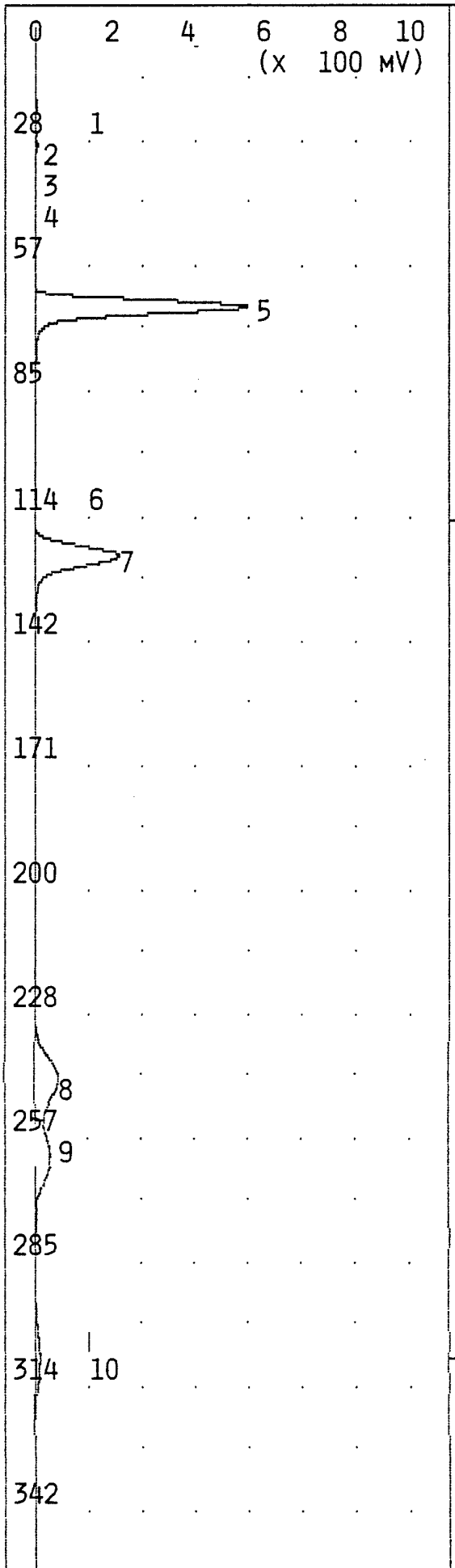
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	26.72	MVS	18.4
2	UNKNOWN	45.49	MVS	20.3
3	UNKNOWN	251.4	MVS	25.1
4	UNKNOWN	34.00	MVS	32.1
5	UNKNOWN	346.1	MVS	37.8
6	UNKNOWN	8.298	MVS	41.2
7	UNKNOWN	51.24	MVS	55.4
8	BENZENE	40.75	PPB	63.7
9	UNKNOWN	16.29	MVS	67.7
10	UNKNOWN	83.94	MVS	71.4
11	UNKNOWN	63.57	MVS	79.8
12	UNKNOWN	20.28	MVS	96.2
13	UNKNOWN	13.39	MVS	104.9
14	TOLUENE	176.4	PPB	120.1
15	UNKNOWN	0.171	MVS	140.1
16	UNKNOWN	1.686	MVS	211.8
17	ETHYLBENZENE	49.23	PPB	239.8
18	M,P-XYLENE	270.4	PPB	257.3
19	O-XYLENE	48.96	PPB	303.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
651-002MW
22.0' 14G

ANALYSIS #16 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 11,95 17:31
SAMPLE TIME: AUG 11,95 17:24

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

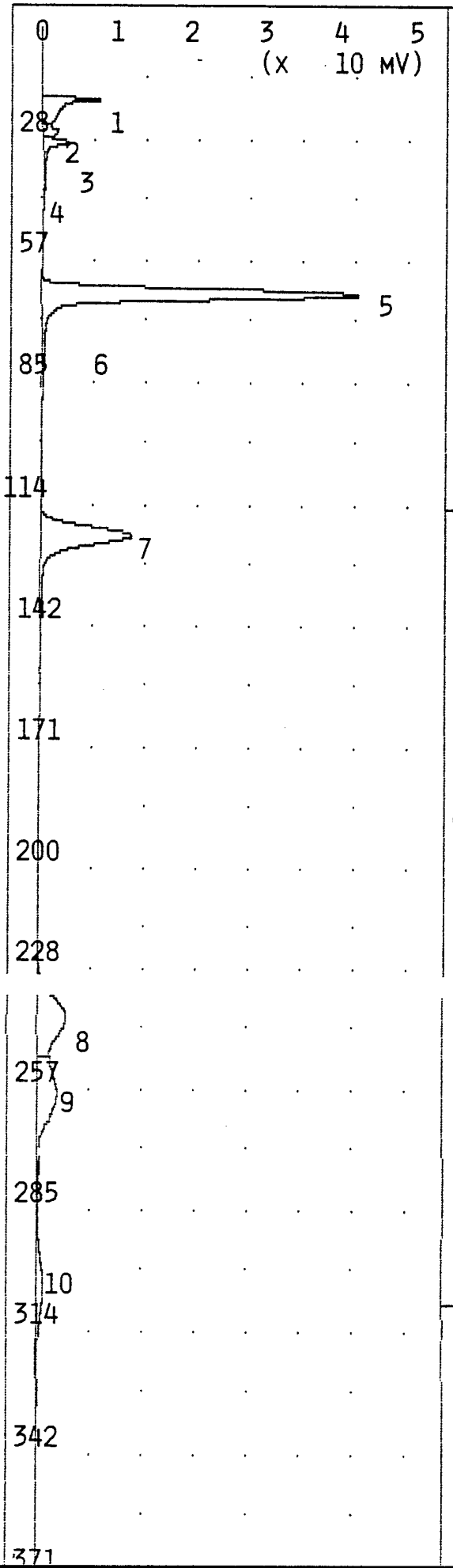
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	6.577	MVS	17.4
2	UNKNOWN	15.52	MVS	19.1
3	UNKNOWN	6.080	MVS	25.0
4	UNKNOWN	25.61	MVS	27.7
5	BENZENE	873.2	PPB	64.6
6	UNKNOWN	0.504	MVS	107.3
7	TOLUENE	760.2	PPB	121.2
8	ETHYLBENZENE	674.8	PPB	241.6
9	M,P-XYLENE	1.332	PPM	259.2
10	O-XYLENE	710.1	PPB	305.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
1 PPM BTEX

ANALYSIS #1 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 15,95 10:00
SAMPLE TIME: AUG 15,95 09:54

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	31	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	21.27 MVS	17.3
2	UNKNOWN	4.368 MVS	24.8
3	UNKNOWN	8.565 MVS	27.4
4	UNKNOWN	0.039 MVS	37.6
5	UNKNOWN	131.6 MVS	63.1
6	UNKNOWN	0.258 MVS	77.7
7	UNKNOWN	64.77 MVS	119.4
8	UNKNOWN	48.51 MVS	238.2
9	UNKNOWN	39.85 MVS	256.2
10	UNKNOWN	14.36 MVS	302.1

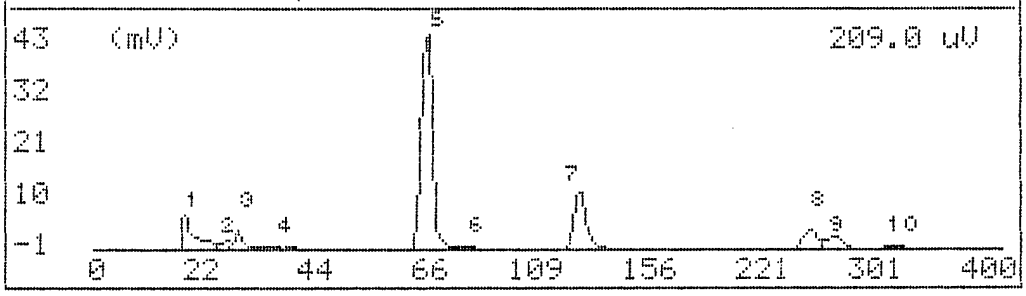
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANG
100 PPB BTEX

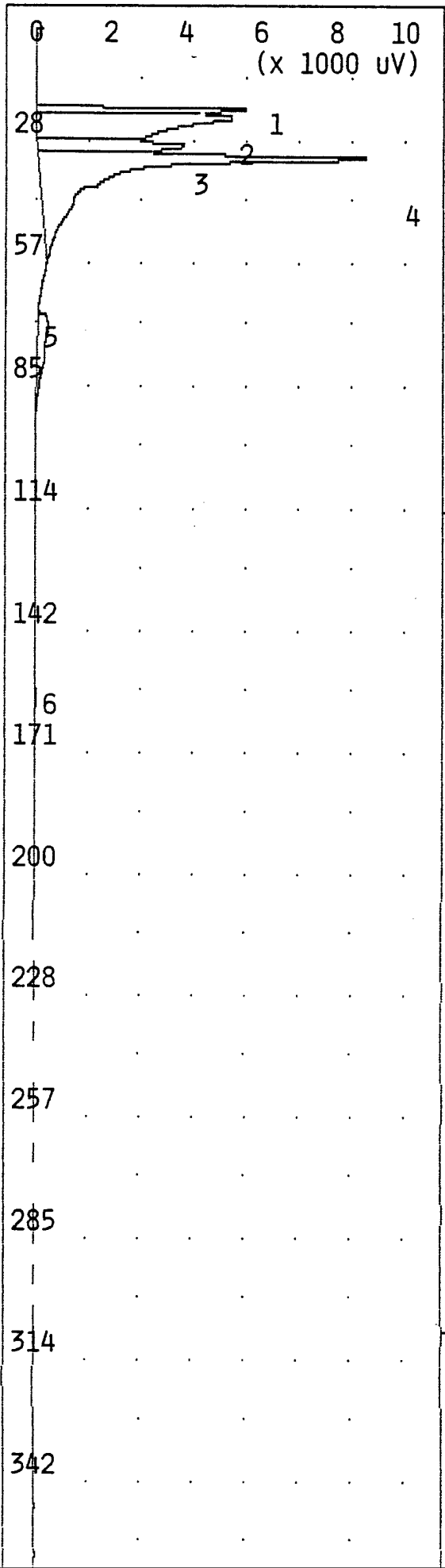
G.C. Ready 10S+ GC Function Aug 15,95 10:08
-- Analysis No 1 -- Run at - Aug 15,95 09:54 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
2	Unknown	4.368 mVS	-No-	24.8 sec
3	Unknown	8.565 mVS	-No-	27.4 sec
4	Unknown	0.039 mVS	-No-	37.6 sec
5	benzene	100.0 ppb	-No-	63.1 sec
6	Unknown	0.258 mVS	-No-	77.7 sec
7	toluene	100.0 ppb	-No-	119.4 sec
8	ethylbenzene	100.0 ppb	-No-	238.2 sec
9	m,p-xylene	200.0 ppb	-No-	256.2 sec
10	o-xylene	100.0 ppb	-No-	302.1 sec

- Detected 10 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #31 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 16:12
SAMPLE TIME: AUG 8,95 16:05

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

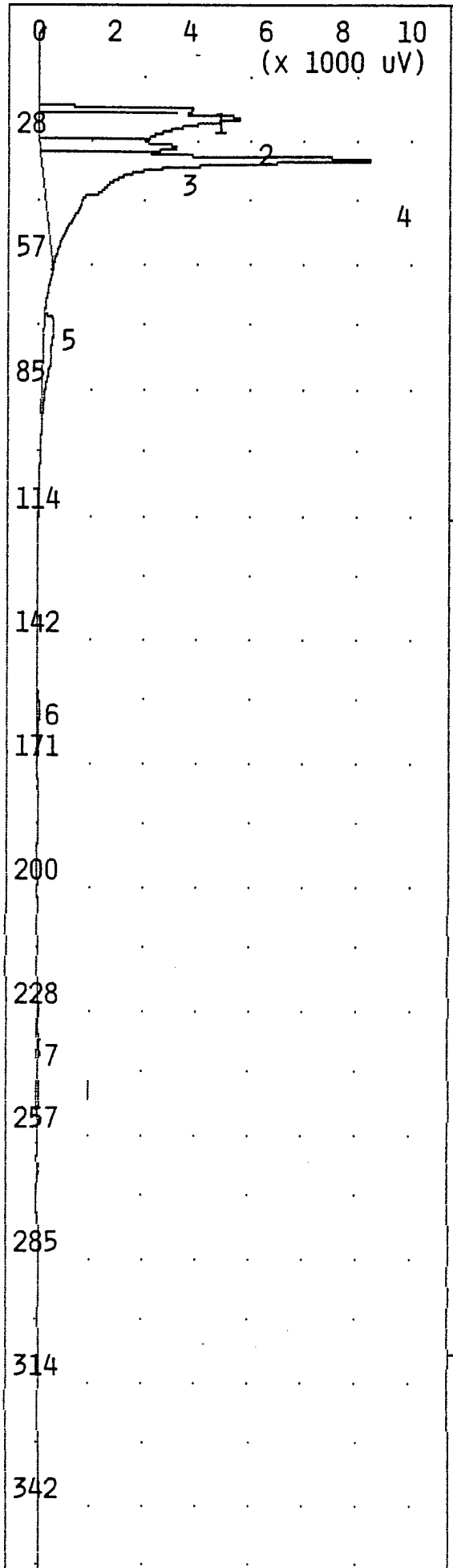
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	8.343	MVS	19.3
2	UNKNOWN	24.83	MVS	21.2
3	UNKNOWN	9.882	MVS	27.8
4	UNKNOWN	38.53	MVS	30.7
5	BENZENE	2.785	PPB	70.0
6	UNKNOWN	1.210	MVS	156.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-003BH 4.0- 5.0
20G

ANALYSIS #32 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 16:22
SAMPLE TIME: AUG 8,95 16:15

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

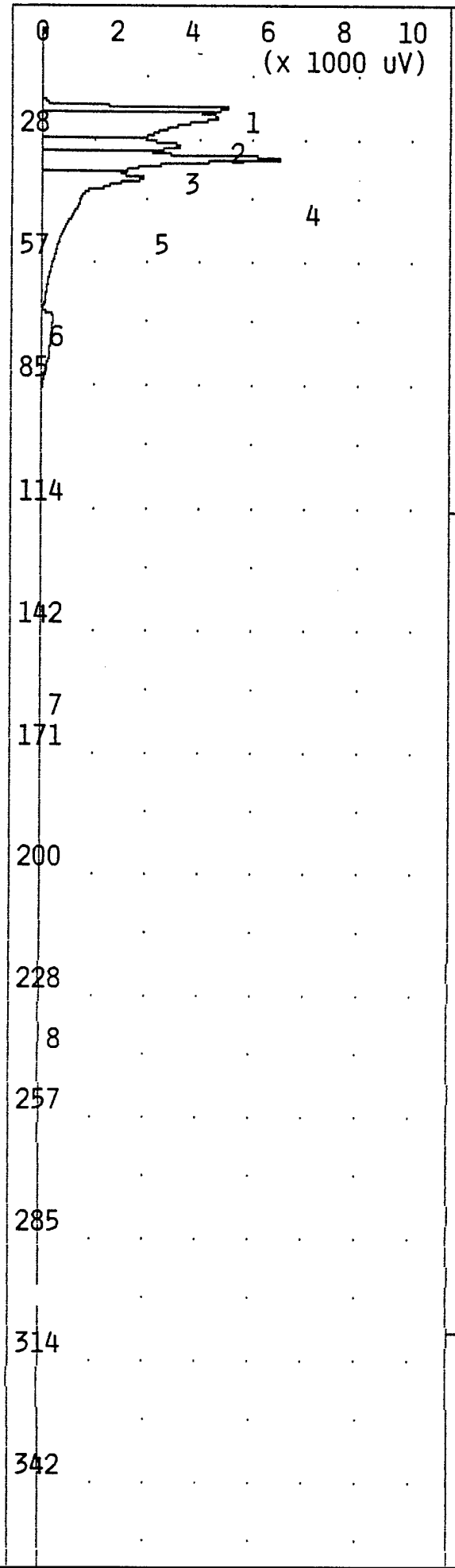
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	6.313 MVS	19.4
2	UNKNOWN	25.39 MVS	21.4
3	UNKNOWN	9.066 MVS	27.8
4	UNKNOWN	41.93 MVS	30.9
5	BENZENE	2.763 PPB	68.1
6	UNKNOWN	0.759 MVS	156.4
7	ETHYLBENZENE	2.397 PPB	236.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANG
591-003BH 9.0-10.0
17G

ANALYSIS #33 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 16:32
SAMPLE TIME: AUG 8,95 16:25

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

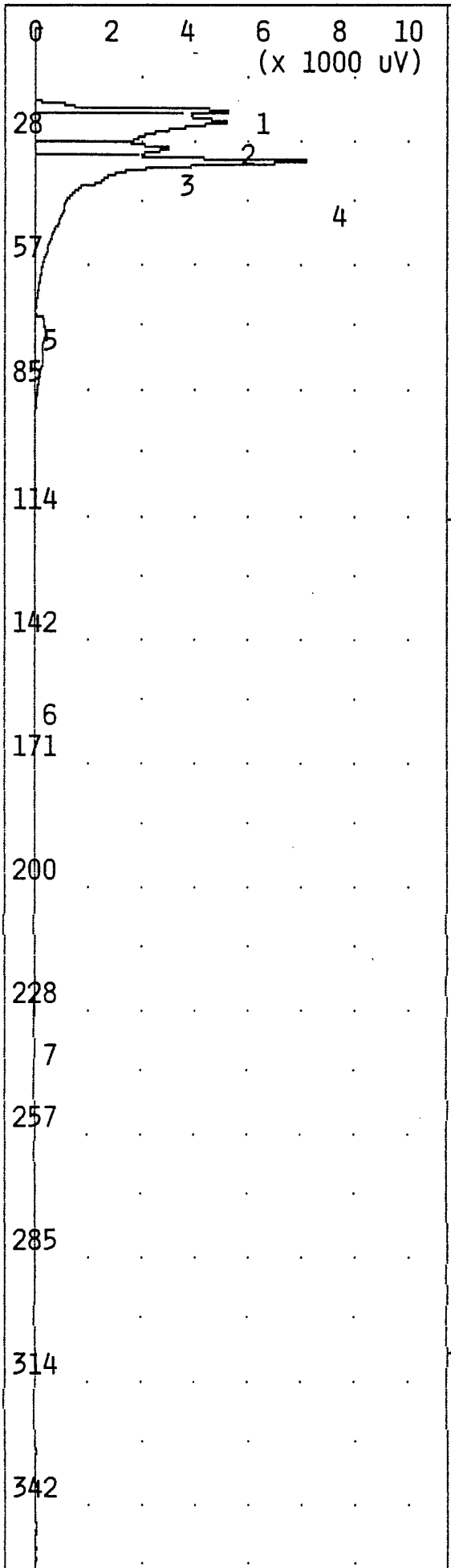
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	8.819	MVS	19.4
2	UNKNOWN	22.78	MVS	21.4
3	UNKNOWN	10.93	MVS	27.8
4	UNKNOWN	18.94	MVS	30.9
5	UNKNOWN	24.13	MVS	35.5
6	BENZENE	3.703	PPB	68.9
7	UNKNOWN	1.039	MVS	157.2
8	UNKNOWN	0.546	MVS	231.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-003BH 14.0-15.0
20G

ANALYSIS #34 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 16:42
SAMPLE TIME: AUG 8,95 16:35

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

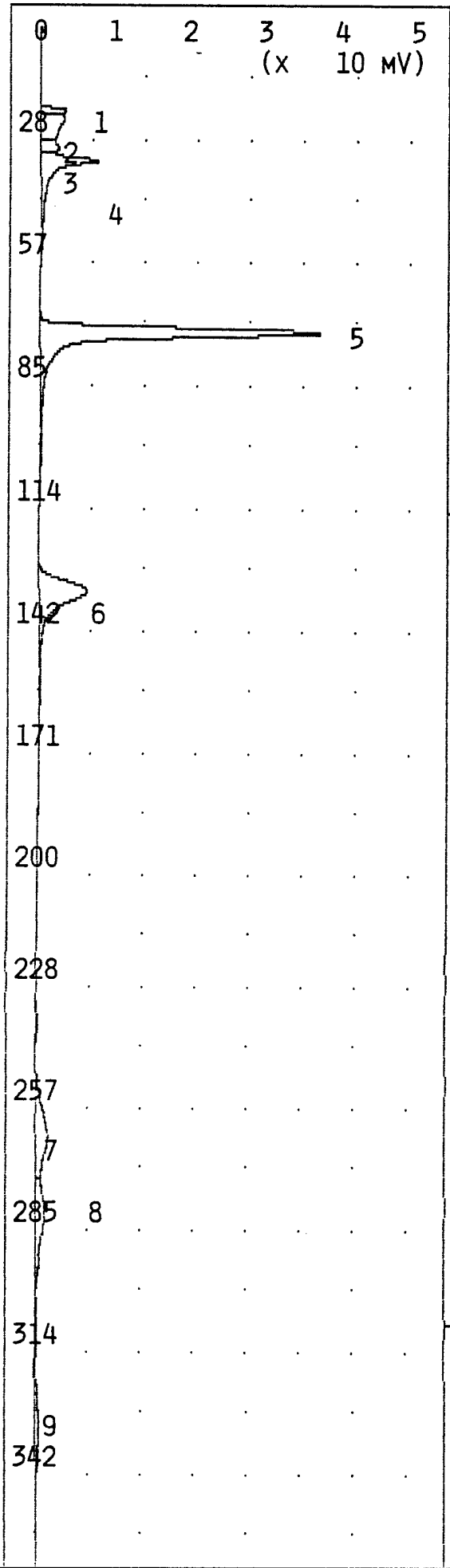
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	9.903	MVS	19.6
2	UNKNOWN	23.95	MVS	22.2
3	UNKNOWN	8.992	MVS	28.2
4	UNKNOWN	37.92	MVS	31.3
5	BENZENE	2.689	PPB	70.8
6	UNKNOWN	0.648	MVS	157.6
7	ETHYLBENZENE	1.816	PPB	238.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANG
873-001BH 1.5- 2.5
17G

ANALYSIS #35 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 16:51
SAMPLE TIME: AUG 8,95 16:45

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

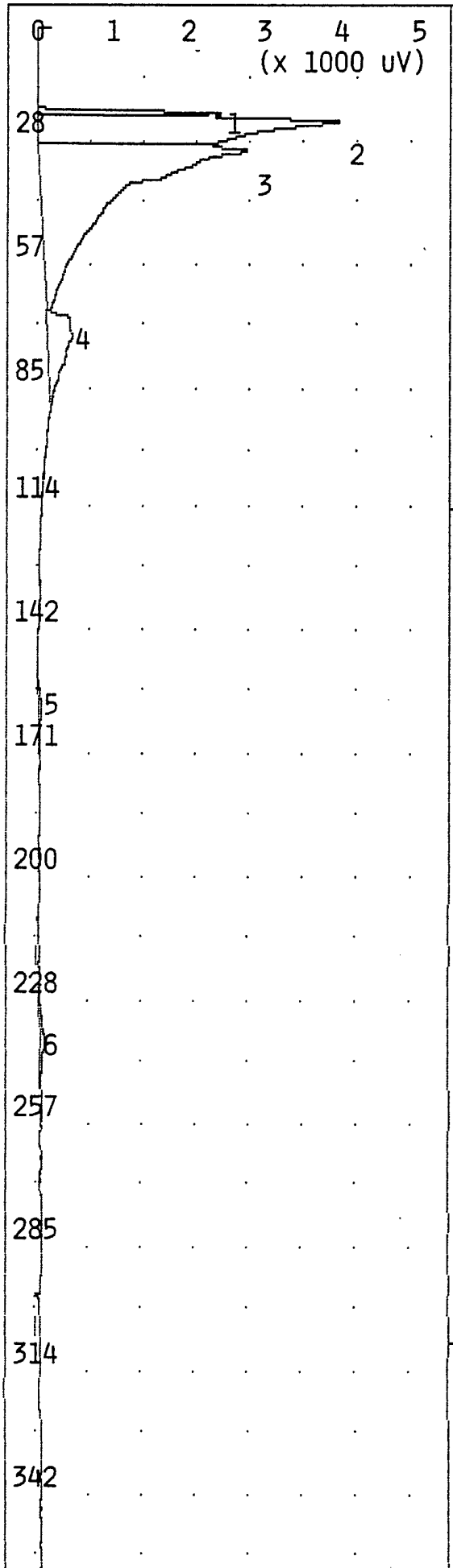
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	5.500	MVS	19.9
2	UNKNOWN	17.46	MVS	21.7
3	UNKNOWN	6.371	MVS	28.5
4	UNKNOWN	28.48	MVS	31.5
5	BENZENE	93.75	PPB	71.4
6	TOLUENE	89.23	PPB	131.7
7	ETHYLBENZENE	79.41	PPB	261.6
8	M,P-XYLENE	187.9	PPB	279.4
9	O-XYLENE	101.9	PPB	329.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

ANALYSIS #36 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 17:01
SAMPLE TIME: AUG 8,95 16:54

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

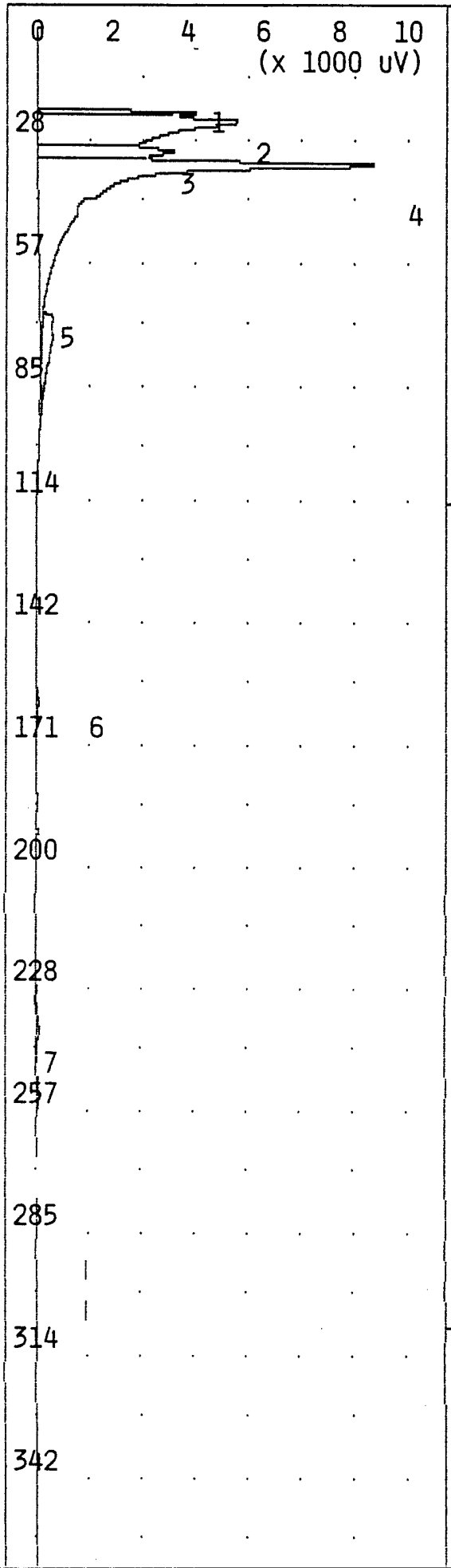
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	3.309 MVS	20.3
2	UNKNOWN	21.06 MVS	22.2
3	UNKNOWN	35.05 MVS	29.0
4	BENZENE	3.537 PPB	72.0
5	UNKNOWN	0.428 MVS	159.0
6	ETHYLBENZENE	2.708 PPB	236.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANG
AIR BLANK

ANALYSIS #37 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 17:11		
SAMPLE TIME: AUG 8,95 17:04		
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

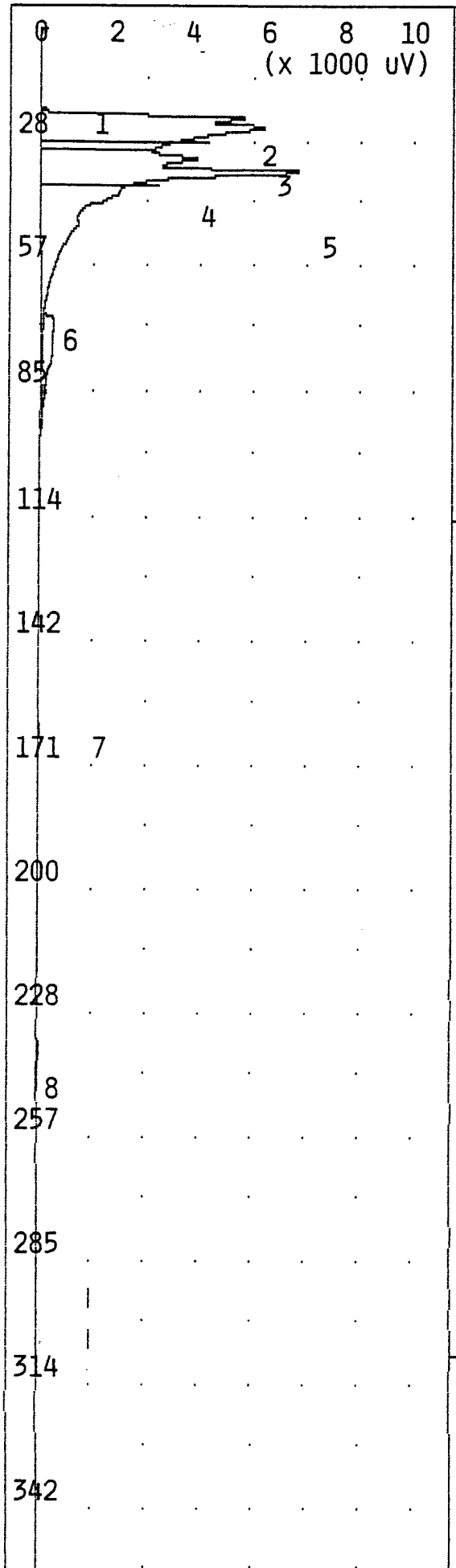
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	6.593	MVS	20.4
2	UNKNOWN	26.85	MVS	22.4
3	UNKNOWN	10.03	MVS	29.3
4	UNKNOWN	52.14	MVS	32.5
5	BENZENE	3.043	PPB	68.2
6	UNKNOWN	0.726	MVS	160.2
7	ETHYLBENZENE	3.616	PPB	238.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANB
873-001BH ~~9.0-10.0~~
14G 4.0-5.0
JB

ANALYSIS #38 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 17:21
SAMPLE TIME: AUG 8,95 17:14

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

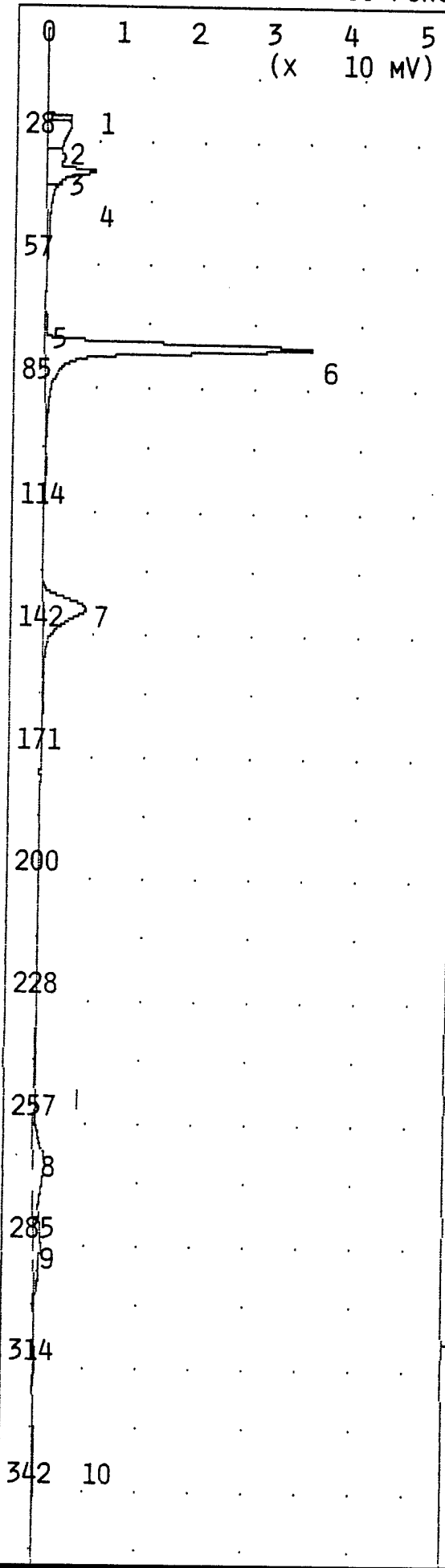
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.299	MVS	19.2
2	UNKNOWN	9.544	MVS	21.2
3	UNKNOWN	29.82	MVS	23.2
4	UNKNOWN	12.60	MVS	30.4
5	UNKNOWN	46.16	MV$	33.8
6	BENZENE	3.340	PPB	68.0
7	UNKNOWN	0.998	MVS	160.4
8	ETHYLBENZENE	4.076	PPB	238.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANG
873-001BH 9.0-10.0
17G

ANALYSIS #39 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 8,95 17:30
SAMPLE TIME: AUG 8,95 17:24

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

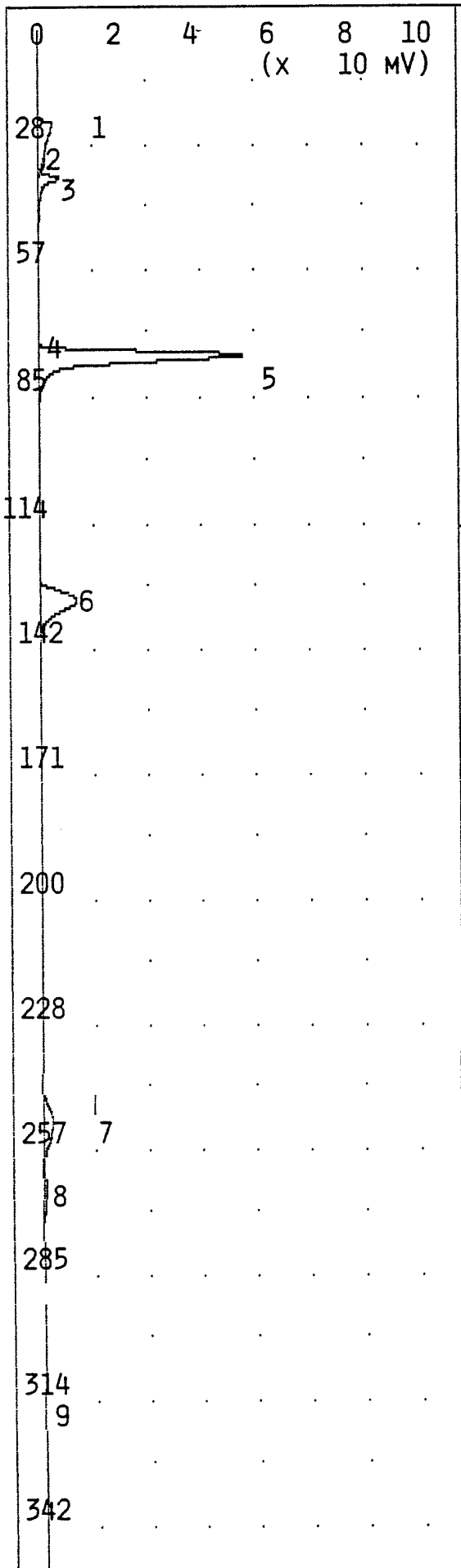
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	5.797	MVS	21.4
2	UNKNOWN	17.24	MVS	23.1
3	UNKNOWN	6.882	MVS	30.4
4	UNKNOWN	24.27	MVS	33.7
5	BENZENE	0.966	PPB	68.9
6	UNKNOWN	108.5	MVS	74.5
7	TOLUENE	79.03	PPB	135.0
8	ETHYLBENZENE	63.04	PPB	265.6
9	M,P-XYLENE	116.1	PPB	284.5
10	O-XYLENE	50.92	PPB	333.3

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

ANALYSIS #8 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 09:56
SAMPLE TIME: AUG 9,95 09:49

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	33.81	MVS	21.8
2	UNKNOWN	0.498	MVS	30.9
3	UNKNOWN	26.26	MVS	34.2
4	UNKNOWN	1.918	MVS	68.8
5	UNKNOWN	166.6	MVS	74.5
6	UNKNOWN	75.52	MVS	129.6
7	UNKNOWN	51.90	MVS	248.8
8	UNKNOWN	35.90	MVS	266.1
9	UNKNOWN	11.14	MVS	310.4

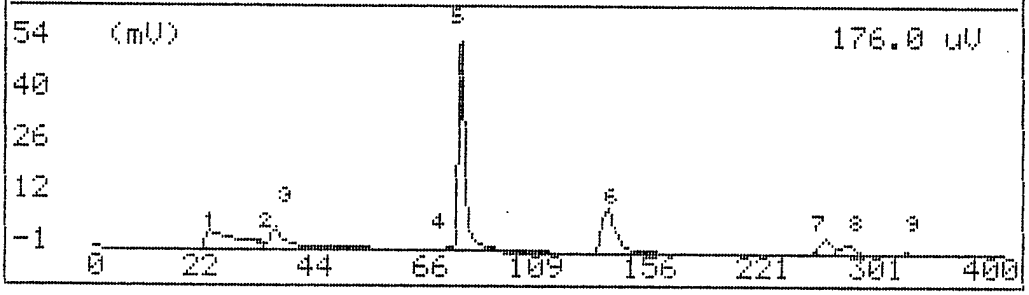
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX STANDARD

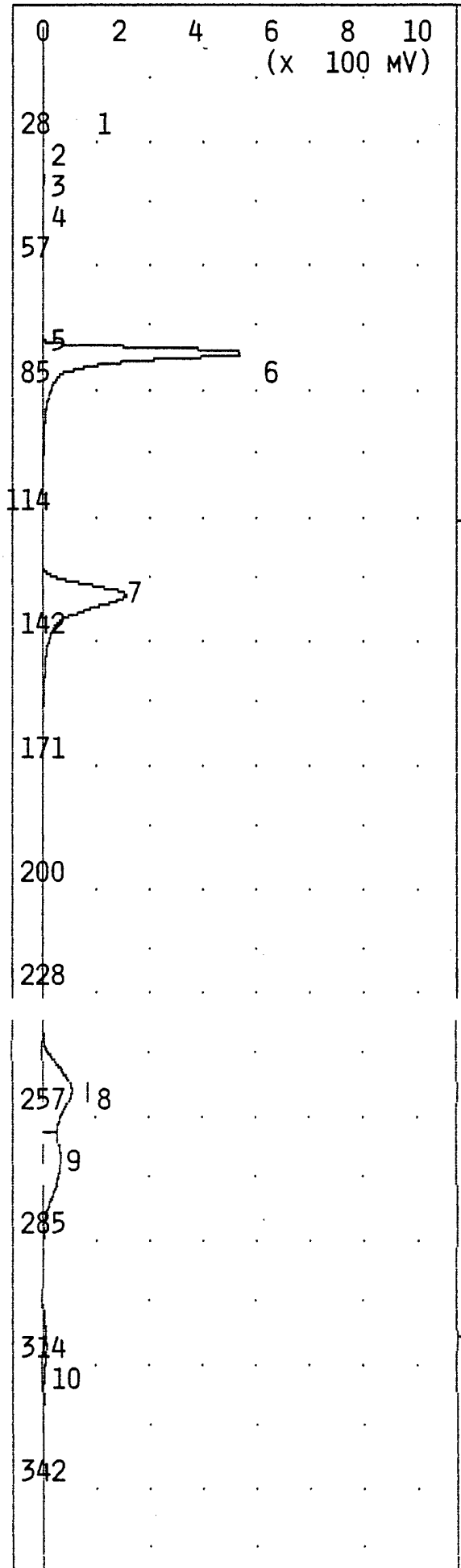
G.C. Ready 10S+ GC Function Aug 9,95 10:02
-- Analysis No 8 -- Run at - Aug 9,95 09:49 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
1	Unknown	33.81 mVS	-No-	21.8 sec
2	Unknown	0.498 mVS	-No-	30.9 sec
3	Unknown	26.26 mVS	-No-	34.2 sec
4	Unknown	1.918 mVS	-No-	60.8 sec
5	benzene	100.0 ppb	-No-	74.5 sec
6	toluene	100.0 ppb	-No-	129.6 sec
7	ethylbenzene	100.0 ppb	-No-	248.8 sec
8	m,p-xylene	200.0 ppb	-No-	266.1 sec
9	o-xylene	100.0 ppb	-No-	310.4 sec

- Detected 9 peaks. [405 sec]



ANALYSIS #9 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 10:11
SAMPLE TIME: AUG 9,95 10:04

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	4.459	MVS	22.2
2	UNKNOWN	23.47	MVS	24.4
3	UNKNOWN	0.655	MVS	31.8
4	UNKNOWN	23.68	MVS	35.0
5	UNKNOWN	1.712	MVS	68.6
6	BENZENE	1.234	PPM	75.4
7	TOLUENE	2.255	PPM	130.4
8	ETHYLBENZENE	2.102	PPM	249.3
9	M,P-XYLENE	4.043	PPM	266.1
10	O-XYLENE	1.762	PPM	309.8

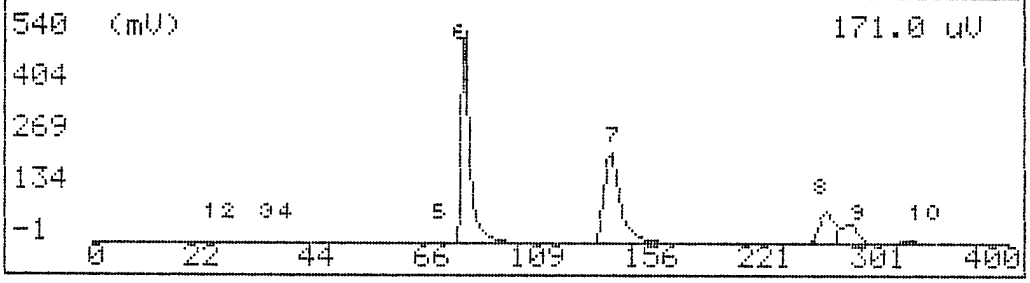
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANG
1 PPM BTEX STANDARD

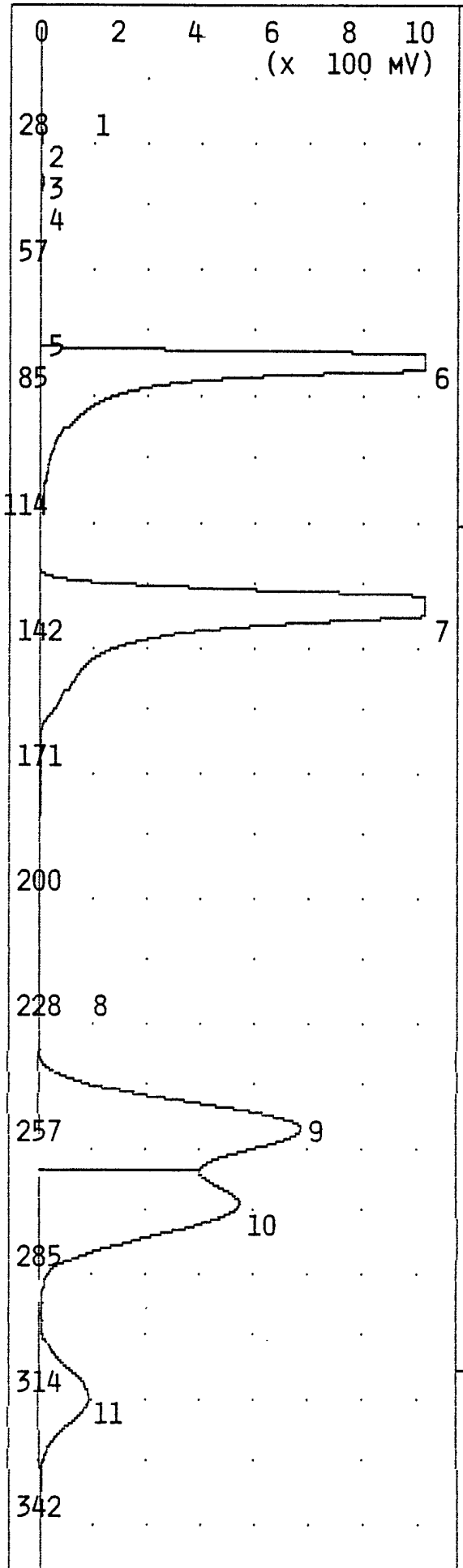
G.C. Ready 10S+ GC Function Aug 9,95 10:15
-- Analysis No 9 -- Run at - Aug 9,95 10:04 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
2	Unknown	23.47 mVS	-No-	24.4 sec
3	Unknown	0.655 mVS	-No-	31.8 sec
4	Unknown	23.68 mVS	-No-	35.0 sec
5	Unknown	1.712 mVS	-No-	60.6 sec
6	benzene	1.000 ppm	-No-	75.4 sec
7	toluene	1.000 ppm	-No-	130.4 sec
8	ethylbenzene	1.000 ppm	-No-	249.3 sec
9	m,p-xylene	2.000 ppm	-No-	266.1 sec
10	o-xylene	1.004 ppm	-No-	309.8 sec

- Detected 10 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #10 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 10:23
SAMPLE TIME: AUG 9,95 10:16

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	4.078	MVS	22.2
2	UNKNOWN	34.23	MVS	24.3
3	UNKNOWN	0.416	MVS	31.6
4	UNKNOWN	42.25	MVS	35.1
5	UNKNOWN	1.359	MVS	68.5
6	BENZENE	6.483	PPM	76.1
7	TOLUENE	8.286	PPM	131.2
8	UNKNOWN	2.030	MVS	217.4
9	ETHYLBENZENE	9.093	PPM	250.4
10	M,P-XYLENE	21.26	PPM	267.4
11	O-XYLENE	10.77	PPM	311.7

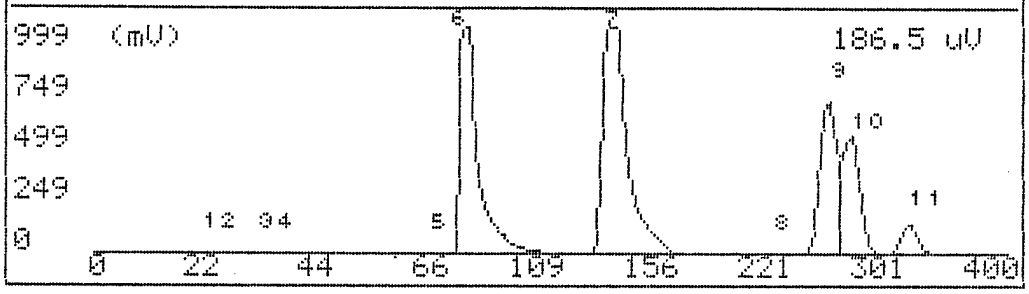
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
10 PPM BTEX STANDARD

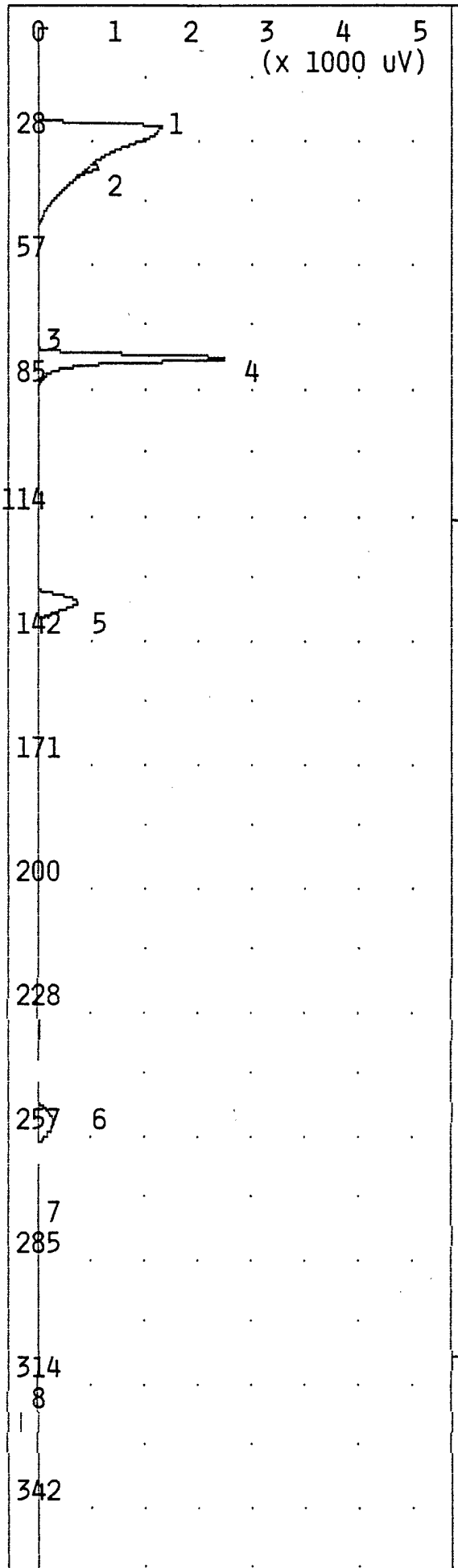
G.C. Ready 10S+ GC Function Aug 9,95 10:28
-- Analysis No 10 -- Run at - Aug 9,95 10:16 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	0.416 mVS	-No-	31.6 sec
4	Unknown	42.25 mVS	-No-	35.1 sec
5	Unknown	1.361 mVS	-No-	68.5 sec
6	benzene	10.00 ppm	-No-	76.1 sec
7	toluene	10.00 ppm	-No-	131.2 sec
8	Unknown	2.030 mVS	-No-	217.4 sec
9	ethylbenzene	10.00 ppm	-No-	250.4 sec
10	m,p-xylene	20.00 ppm	-No-	267.4 sec
11	o-xylene	10.01 ppm	-No-	311.7 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #11 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 10:36
SAMPLE TIME: AUG 9,95 10:29

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

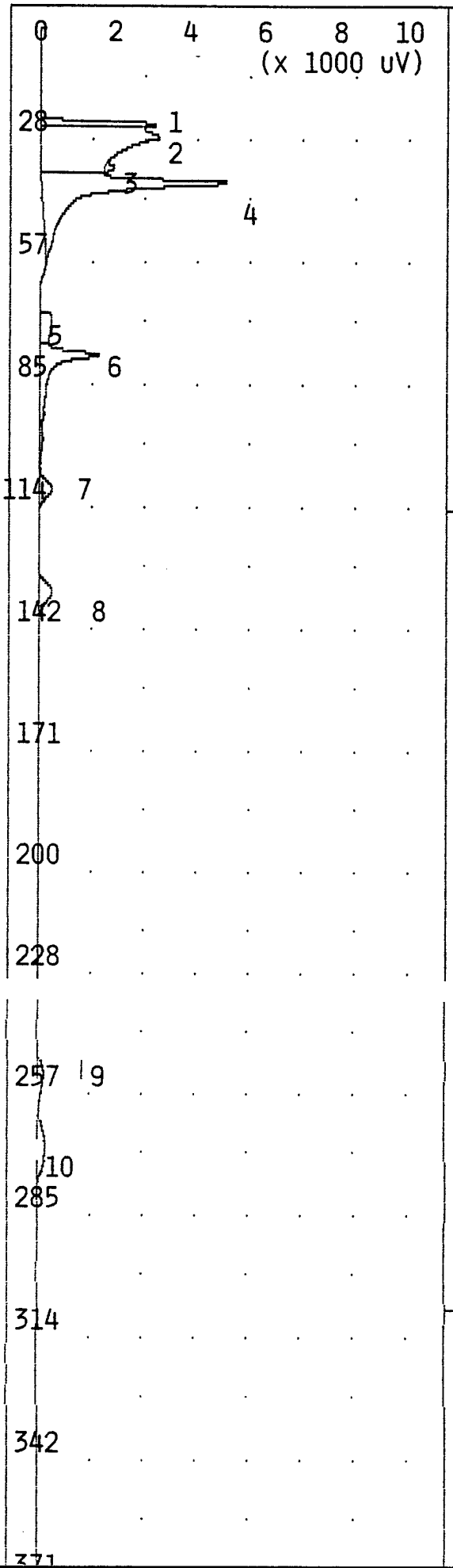
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	21.99	MVS	23.3
2	UNKNOWN	0.196	MVS	32.5
3	UNKNOWN	2.459	MVS	68.2
4	BENZENE	5.344	PPB	76.6
5	TOLUENE	7.586	PPB	132.4
6	ETHYLBENZENE	19.42	PPB	251.7
7	M,P-XYLENE	34.68	PPB	269.6
8	O-XYLENE	12.61	PPB	312.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
~~10 PPM BTEX STANDARD~~ GB
AIR BLANK

ANALYSIS #12 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 10:46
SAMPLE TIME: AUG 9,95 10:39

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

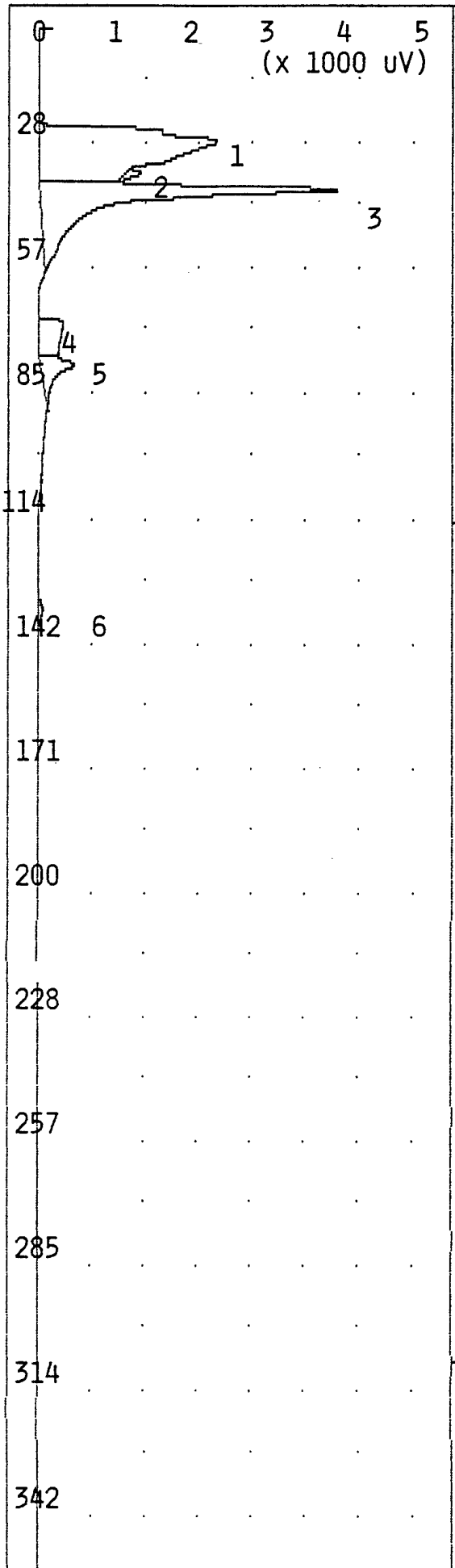
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	6.139	MVS	23.2
2	UNKNOWN	26.50	MVS	26.1
3	UNKNOWN	0.382	MVS	33.2
4	UNKNOWN	21.45	MVS	36.7
5	UNKNOWN	2.980	MVS	68.2
6	BENZENE	5.960	PPB	76.9
7	UNKNOWN	2.864	MVS	108.2
8	TOLUENE	3.422	PPB	132.0
9	ETHYLBENZENE	7.485	PPB	250.9
10	M,P-XYLENE	27.13	PPB	268.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-001MW 2.0- 3.0
20G

ANALYSIS #13 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 10:59
SAMPLE TIME: AUG 9,95 10:52

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

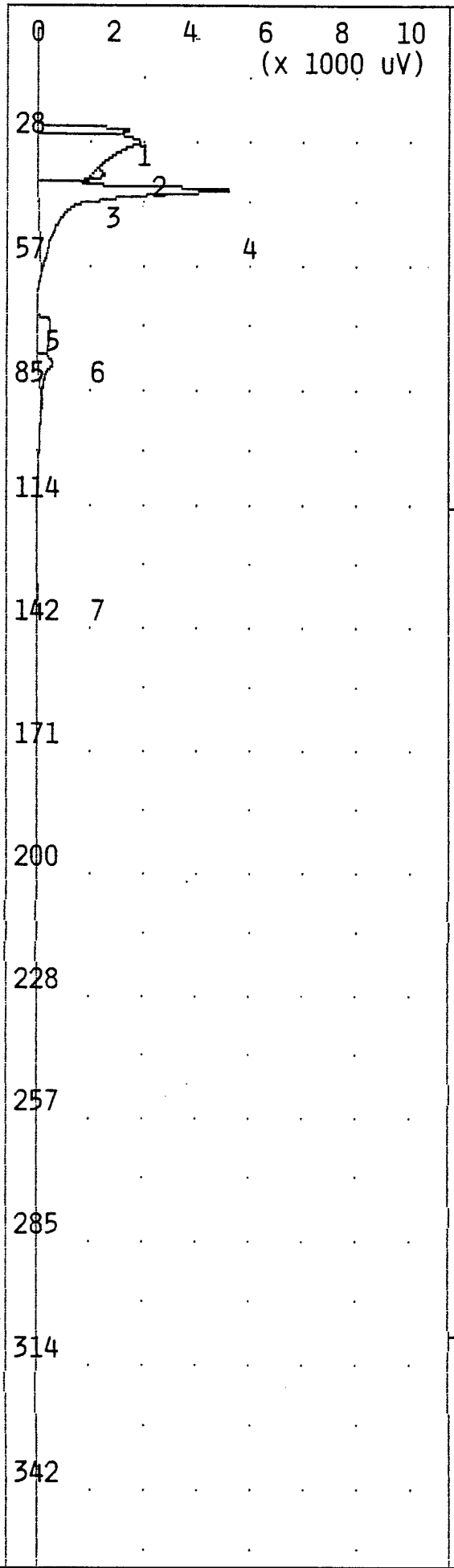
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	23.90 MVS	26.6
2	UNKNOWN	0.304 MVS	33.8
3	UNKNOWN	17.82 MVS	37.5
4	UNKNOWN	3.127 MVS	68.1
5	BENZENE	1.356 PPB	77.6
6	TOLUENE	0.825 PPB	133.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-001MW 4.0- 5.0
17G

ANALYSIS #14 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 11:14
SAMPLE TIME: AUG 9,95 11:08

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

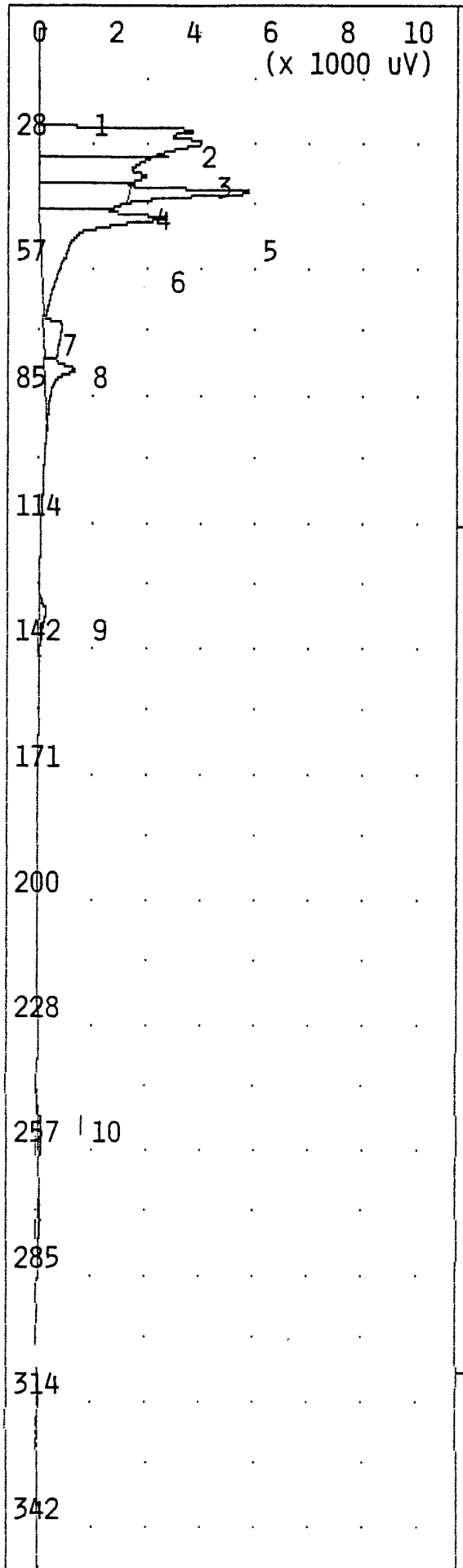
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	4.651 MVS	24.0
2	UNKNOWN	24.37 MVS	26.6
3	UNKNOWN	0.614 MVS	34.0
4	UNKNOWN	21.53 MVS	37.7
5	UNKNOWN	3.299 MVS	68.0
6	BENZENE	1.182 PPB	77.7
7	TOLUENE	0.668 PPB	131.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-001MW 9.0-10.0
20G

ANALYSIS #15 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 11:24
SAMPLE TIME: AUG 9,95 11:17

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

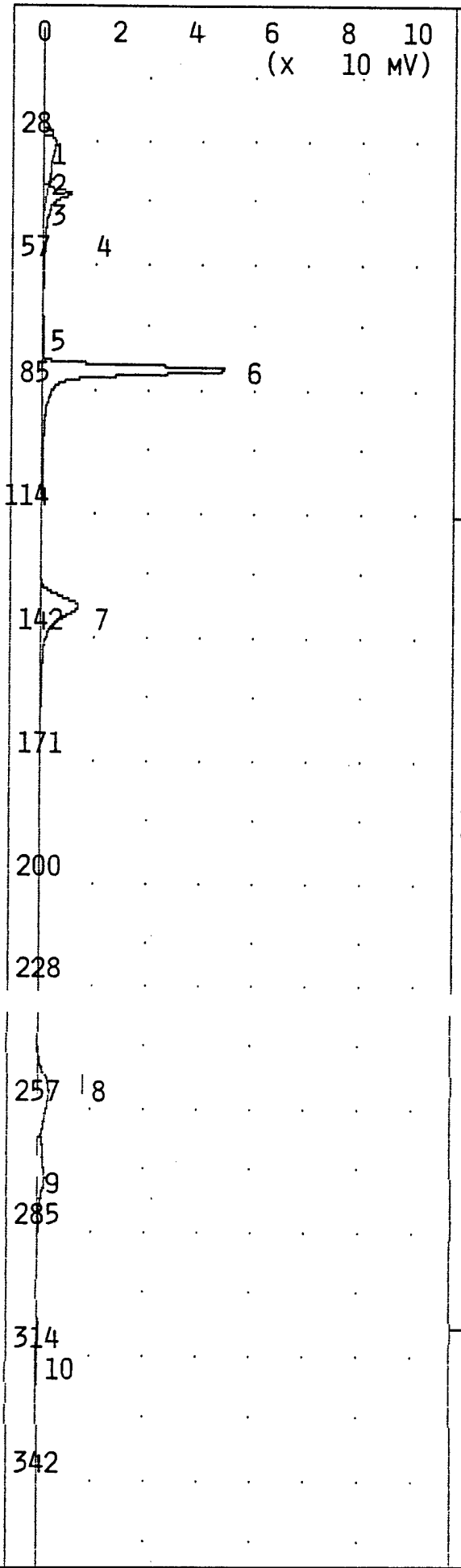
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.301	MVS	21.6
2	UNKNOWN	8.173	MVS	23.8
3	UNKNOWN	35.78	MVS	26.6
4	UNKNOWN	0.798	MVS	34.1
5	UNKNOWN	19.57	MVS	37.9
6	UNKNOWN	21.04	MVS	43.6
7	UNKNOWN	3.838	MVS	68.5
8	BENZENE	2.143	PPB	78.0
9	TOLUENE	1.380	PPB	132.6
10	ETHYLBENZENE	1.807	PPB	250.9

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-001MW 14.0-15.0
17G

ANALYSIS #16 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 11:34
SAMPLE TIME: AUG 9,95 11:27

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	4.758	MVS	24.6
2	UNKNOWN	32.30	MVS	27.0
3	UNKNOWN	0.412	MVS	35.0
4	UNKNOWN	46.53	MVS	38.8
5	UNKNOWN	1.901	MVS	67.7
6	BENZENE	95.20	PPB	79.0
7	TOLUENE	91.03	PPB	133.8
8	ETHYLBENZENE	73.93	PPB	252.2
9	M,P-XYLENE	134.0	PPB	269.0
10	O-XYLENE	38.96	PPB	311.2

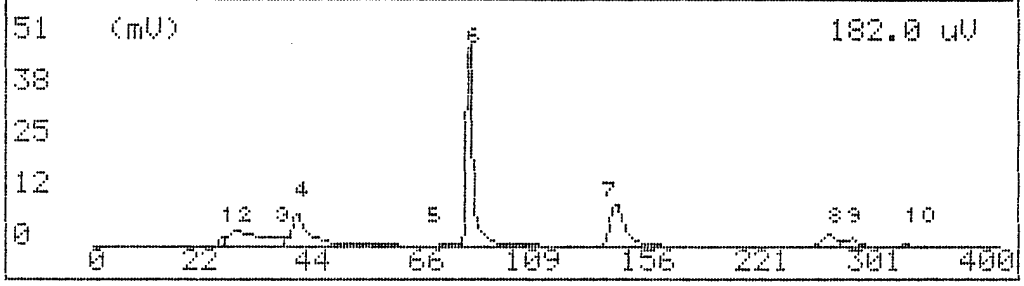
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

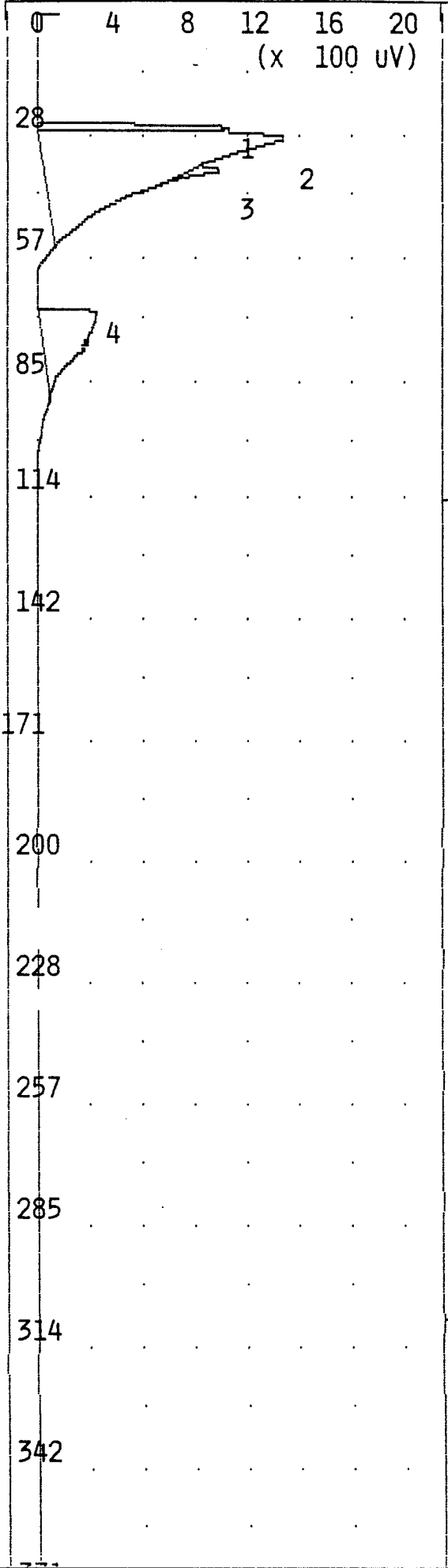
G.C. Ready 10S+ GC Function Aug 9,95 11:39
-- Analysis No 16 -- Run at - Aug 9,95 11:27 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
2	Unknown	32.30 mVS	-No-	27.0 sec
3	Unknown	0.412 mVS	-No-	35.0 sec
4	Unknown	46.53 mVS	-No-	38.8 sec
5	Unknown	1.901 mVS	-No-	67.7 sec
6	benzene	100.0 ppb	-No-	79.0 sec
7	toluene	100.0 ppb	-No-	133.8 sec
8	ethylbenzene	99.99 ppb	-No-	252.2 sec
9	m,p-xylene	200.0 ppb	-No-	269.0 sec
10	o-xylene	100.0 ppb	-No-	311.2 sec

- Detected 10 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #17 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED:	AUG 9,95 11:47
SAMPLE TIME:	AUG 9,95 11:40

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

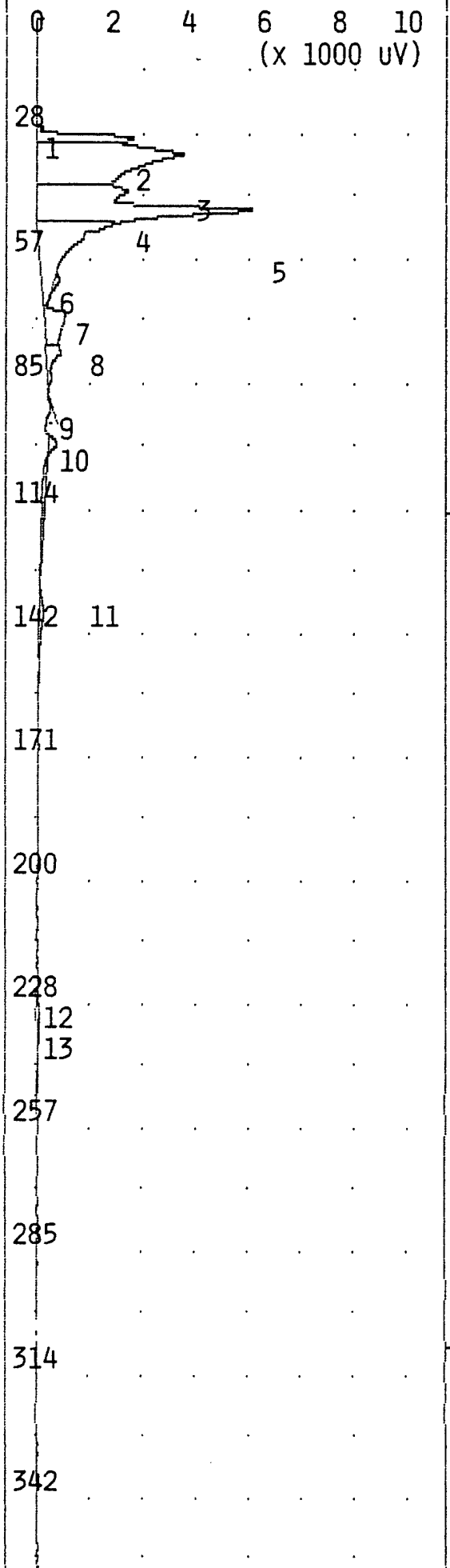
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	2.262 MVS	25.0
2	UNKNOWN	20.07 MVS	27.2
3	UNKNOWN	0.310 MVS	35.2
4	UNKNOWN	4.906 MVS	68.1

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #18 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 11:56
SAMPLE TIME: AUG 9,95 11:50

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

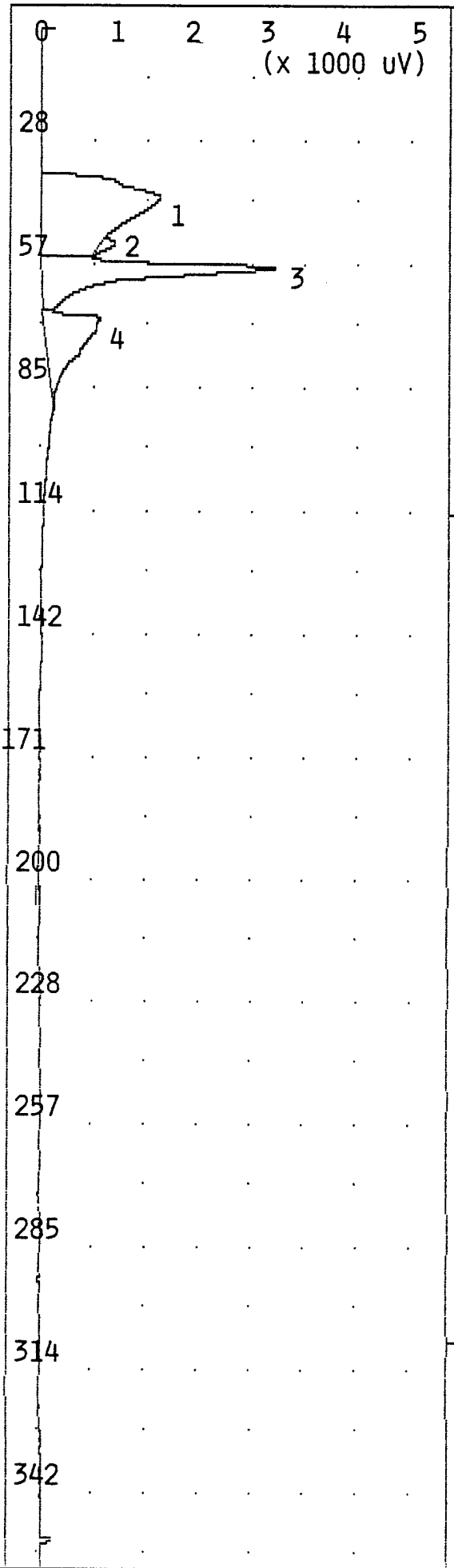
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.675	MVS	25.4
2	UNKNOWN	6.124	MVS	27.3
3	UNKNOWN	28.48	MVS	31.1
4	UNKNOWN	9.053	MVS	39.6
5	UNKNOWN	32.97	MVS	43.8
6	UNKNOWN	0.258	MVS	60.6
7	UNKNOWN	3.852	MVS	67.7
8	BENZENE	1.190	PPB	76.2
9	UNKNOWN	-0.00	MVS	88.6
10	UNKNOWN	0.428	MVS	97.4
11	TOLUENE	1.263	PPB	136.0
12	UNKNOWN	-0.13	MVS	224.6
13	ETHYLBENZENE	0.891	PPB	232.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
873-002BH 1.5- 2.5
17G

ANALYSIS #19 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 12:07
SAMPLE TIME: AUG 9,95 12:00

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

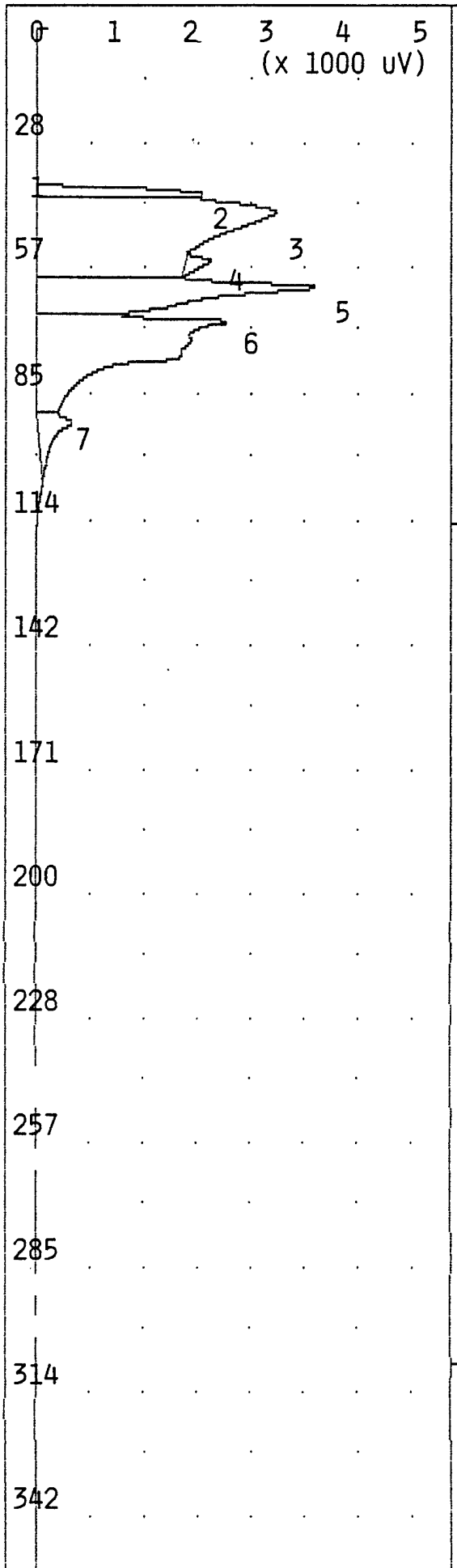
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	27.02 MVS	39.7
2	UNKNOWN	0.470 MVS	50.4
3	UNKNOWN	14.45 MVS	56.1
4	UNKNOWN	7.634 MVS	67.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
873-002BH 4.0- 5.0
17G

ANALYSIS #20 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 12:16
SAMPLE TIME: AUG 9,95 12:10

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

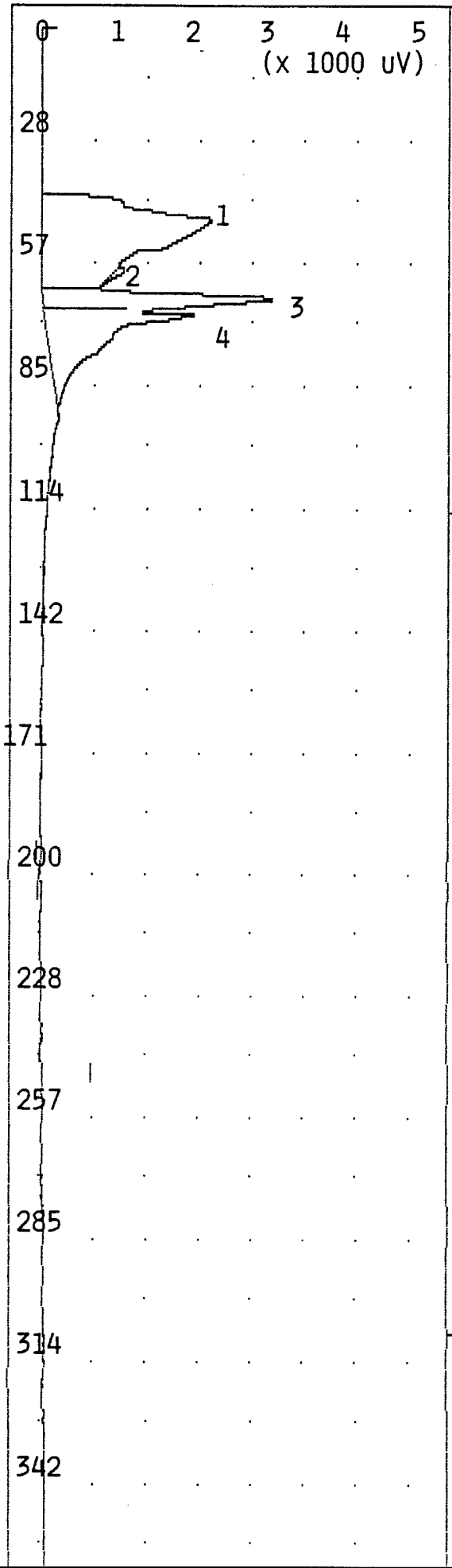
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	0.184 MVS	33.9
2	UNKNOWN	6.978 MVS	38.2
3	UNKNOWN	50.79 MVS	42.5
4	UNKNOWN	0.920 MVS	53.9
5	UNKNOWN	21.87 MVS	59.9
6	UNKNOWN	28.97 MVS	67.7
7	UNKNOWN	2.762 MVS	90.2

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
873-002BH 9.0-10.0
23G

ANALYSIS #21 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 12:26
SAMPLE TIME: AUG 9,95 12:19

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

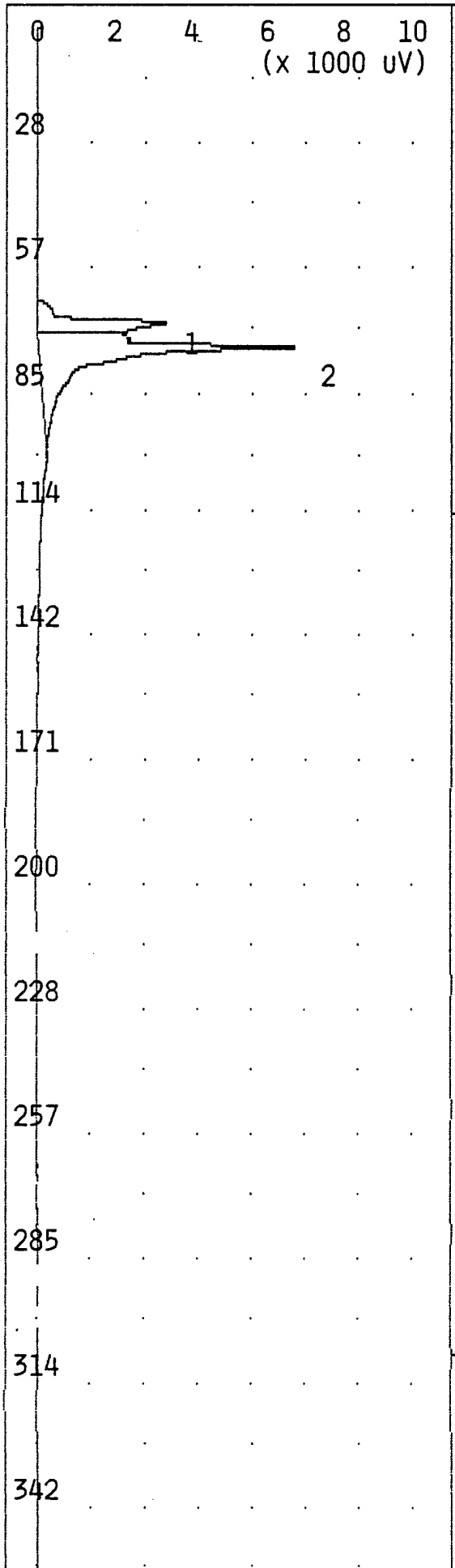
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	36.92 MVS	45.2
2	UNKNOWN	0.335 MVS	57.2
3	UNKNOWN	11.21 MVS	63.6
4	UNKNOWN	13.69 MVS	67.3

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
873-003BH 1.5- 2.5
20G

ANALYSIS #22 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 12:36
SAMPLE TIME: AUG 9,95 12:29

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

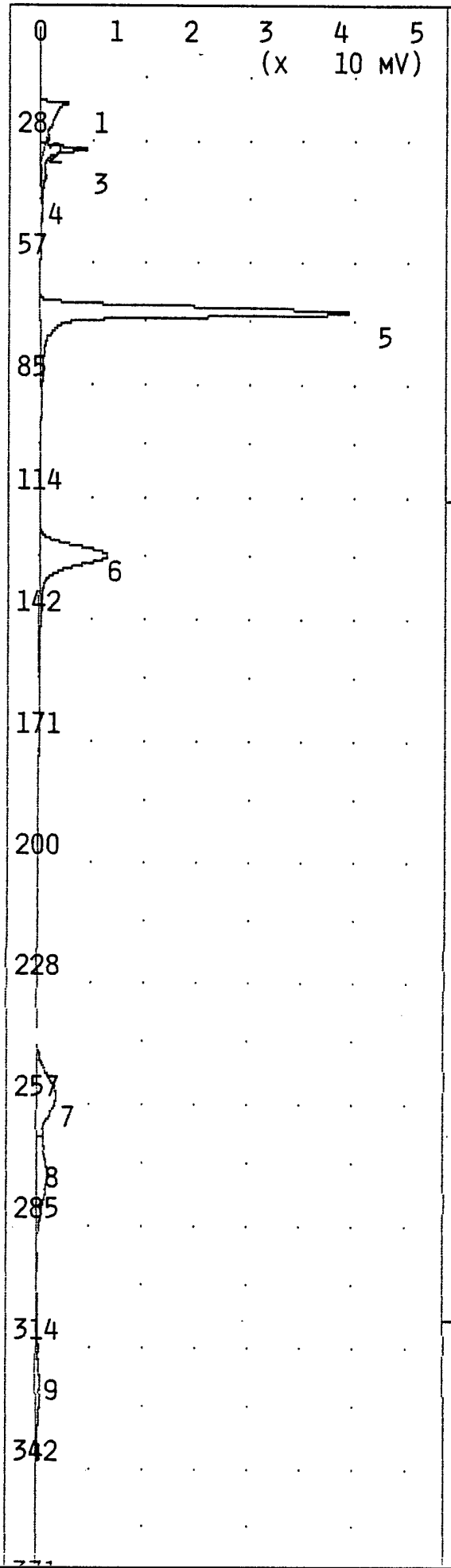
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	16.34	MVS	68.0
2	BENZENE	21.98	PPB	73.3

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
873-003BH 4.0- 5.0
17G

ANALYSIS #1 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 14:49
SAMPLE TIME: AUG 9,95 14:42

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	18.50 MVS	18.1
2	UNKNOWN	0.265 MVS	26.0
3	UNKNOWN	16.09 MVS	28.8
4	UNKNOWN	0.446 MVS	35.4
5	UNKNOWN	123.0 MVS	67.2
6	UNKNOWN	52.86 MVS	126.0
7	UNKNOWN	29.93 MVS	253.0
8	UNKNOWN	23.90 MVS	271.4
9	UNKNOWN	12.69 MVS	320.2

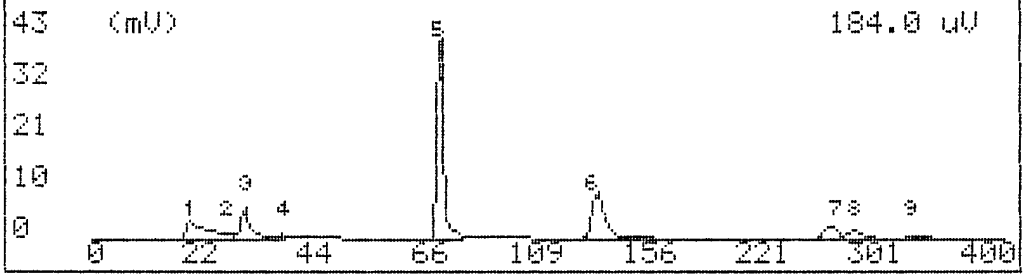
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

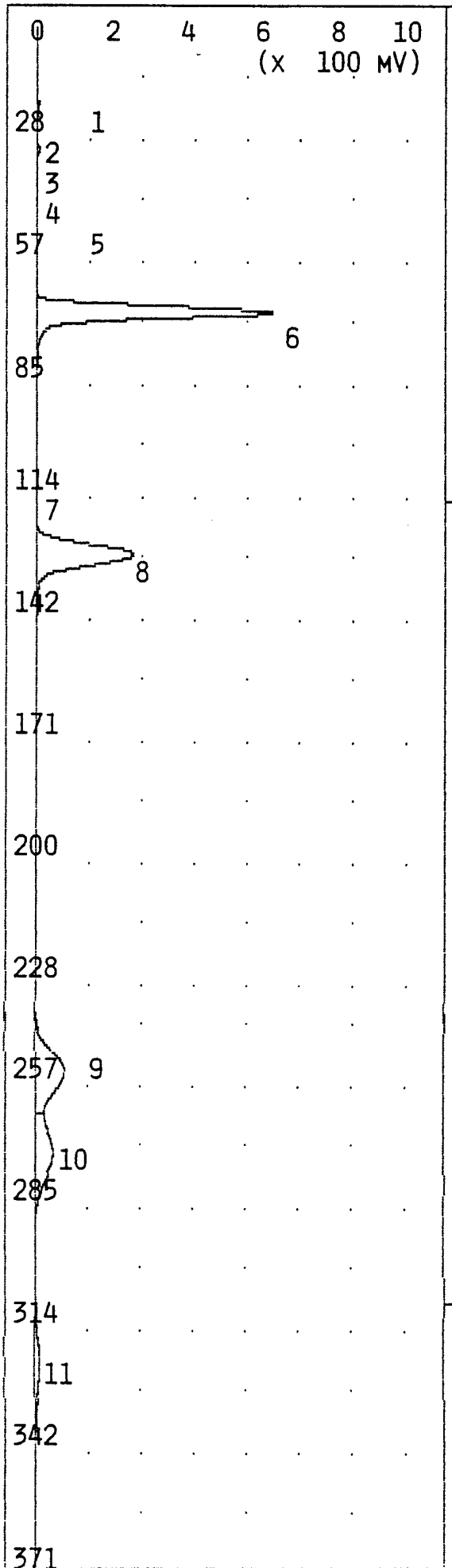
G.C. Ready 10S+ GC Function Aug 9,95 14:54
-- Analysis No 1 -- Run at - Aug 9,95 14:42 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
1	Unknown	18.50 mVS	-No-	18.1 sec
2	Unknown	0.265 mVS	-No-	26.0 sec
3	Unknown	16.09 mVS	-No-	28.8 sec
4	Unknown	0.446 mVS	-No-	35.4 sec
5	benzene	100.0 ppb	-No-	67.2 sec
6	toluene	100.0 ppb	-No-	126.0 sec
7	ethylbenzene	100.0 ppb	-No-	253.0 sec
8	m,p-xylene	200.4 ppb	-No-	271.4 sec
9	o-xylene	102.4 ppb	-No-	320.2 sec

- Detected 9 peaks. [405 sec]



ANALYSIS #2 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 15:03
SAMPLE TIME: AUG 9,95 14:56

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	10.03 MVS	18.2
2	UNKNOWN	19.74 MVS	19.8
3	UNKNOWN	4.836 MVS	26.0
4	UNKNOWN	29.43 MVS	28.8
5	UNKNOWN	0.289 MVS	35.4
6	BENZENE	1.818 PPM	67.0
7	UNKNOWN	0.194 MVS	109.8
8	TOLUENE	2.908 PPM	125.7
9	ETHYLBENZENE	3.274 PPM	252.2
10	M,P-XYLENE	6.092 PPM	270.9
11	O-XYLENE	2.289 PPM	320.2

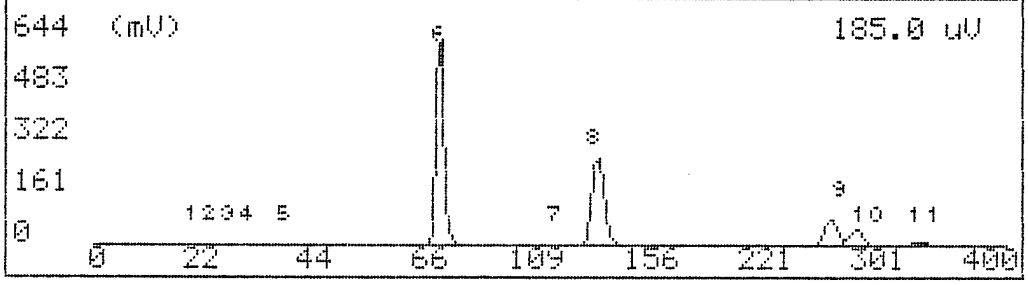
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
1 PPM BTEX

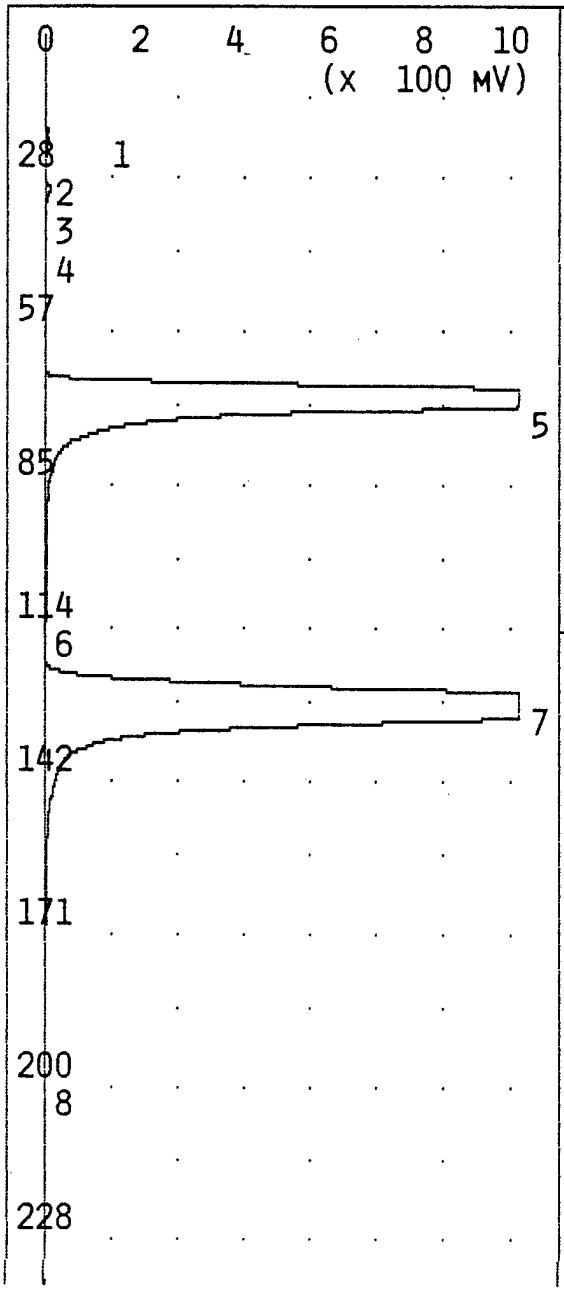
G.C. Ready 10S+ GC Function Aug 9,95 15:07
-- Analysis No 2 -- Run at - Aug 9,95 14:56 -

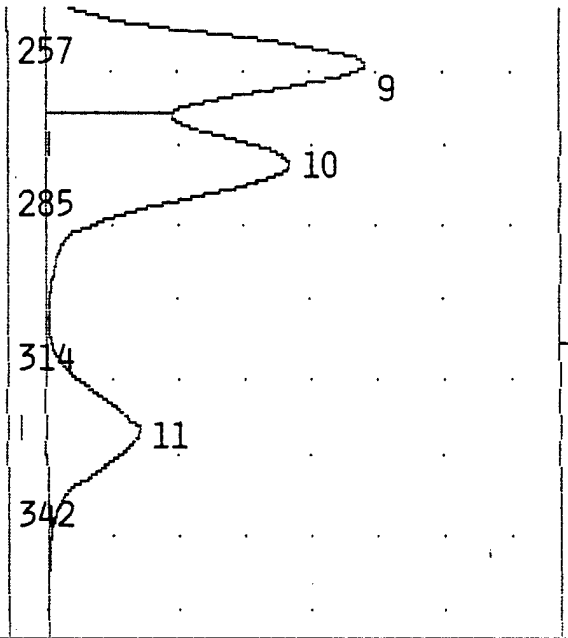
Pk No	Name	Conc/Area		Alarm	Ret.Time
3	Unknown	4.836	mVS	-No-	26.0 sec
4	Unknown	29.43	mVS	-No-	28.8 sec
5	Unknown	0.289	mVS	-No-	35.4 sec
6	benzene	1.000	ppm	-No-	67.0 sec
7	Unknown	0.194	mVS	-No-	109.8 sec
8	toluene	1.000	ppm	-No-	125.7 sec
9	ethylbenzene	1.000	ppm	-No-	252.2 sec
10	m,p-xylene	2.000	ppm	-No-	270.9 sec
11	o-xylene	1.003	ppm	-No-	320.2 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #3 10S+ GC FUNCTION ANALYSIS REPORT





TIME PRINTED: AUG 9,95 15:15
SAMPLE TIME: AUG 9,95 15:09

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	9.658	MVS	18.4
2	UNKNOWN	33.12	MVS	20.1
3	UNKNOWN	0.216	MVS	26.2
4	UNKNOWN	45.47	MVS	29.0
5	BENZENE	3.946	PPM	67.6
6	UNKNOWN	2.713	MVS	110.4
7	TOLUENE	7.201	PPM	126.8
8	UNKNOWN	7.030	MVS	197.2
9	ETHYLBENZENE	8.643	PPM	253.8
10	M,P-XYLENE	20.16	PPM	272.5
11	O-XYLENE	10.67	PPM	321.3

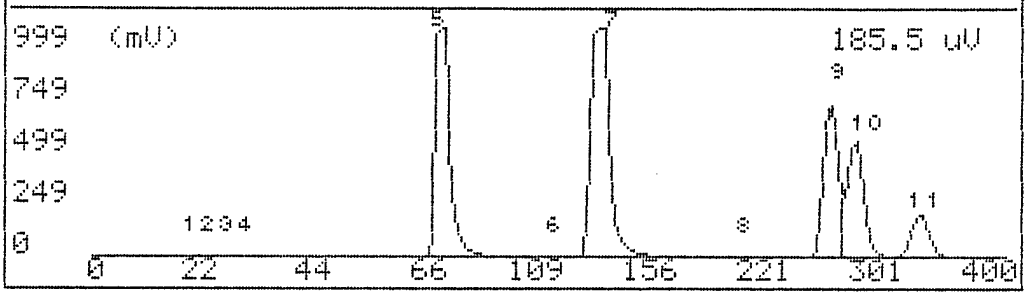
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
10 PPM BTEX

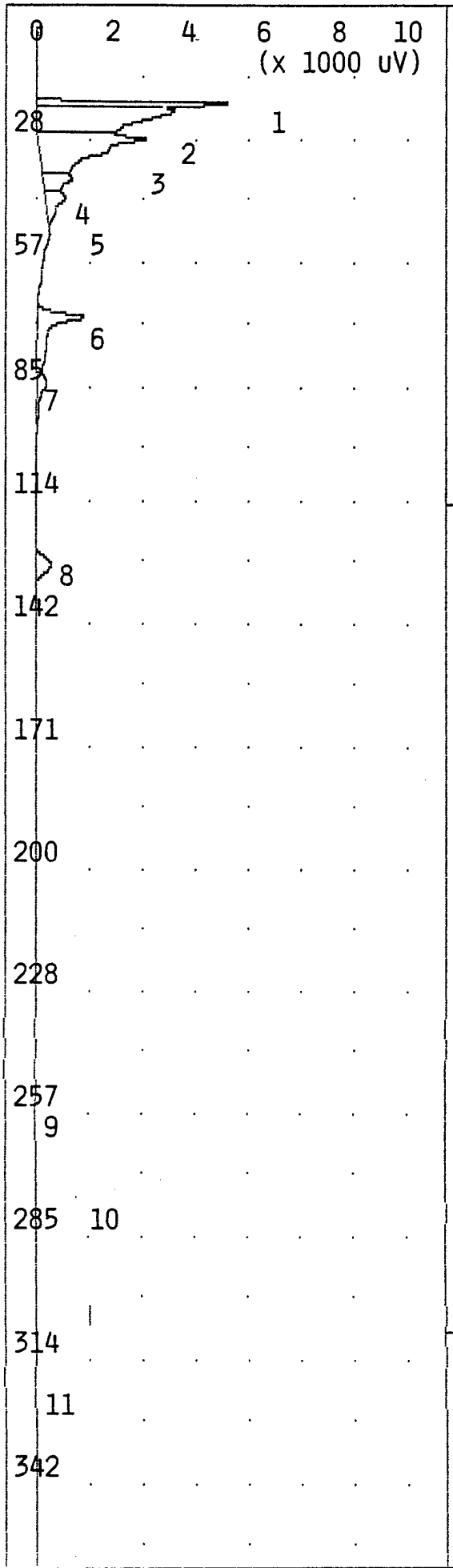
G.C. Ready 10S+ GC Function Aug 9,95 15:20
-- Analysis No 3 -- Run at - Aug 9,95 15:09 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	0.216 mVS	-No-	26.2 sec
4	Unknown	45.47 mVS	-No-	29.0 sec
5	benzene	10.00 ppm	-No-	67.6 sec
6	Unknown	2.713 mVS	-No-	110.4 sec
7	toluene	10.00 ppm	-No-	126.8 sec
8	Unknown	7.030 mVS	-No-	197.2 sec
9	ethylbenzene	10.00 ppm	-No-	253.8 sec
10	m,p-xylene	20.00 ppm	-No-	272.5 sec
11	o-xylene	10.00 ppm	-No-	321.3 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #4 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 15:28
SAMPLE TIME: AUG 9,95 15:21

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

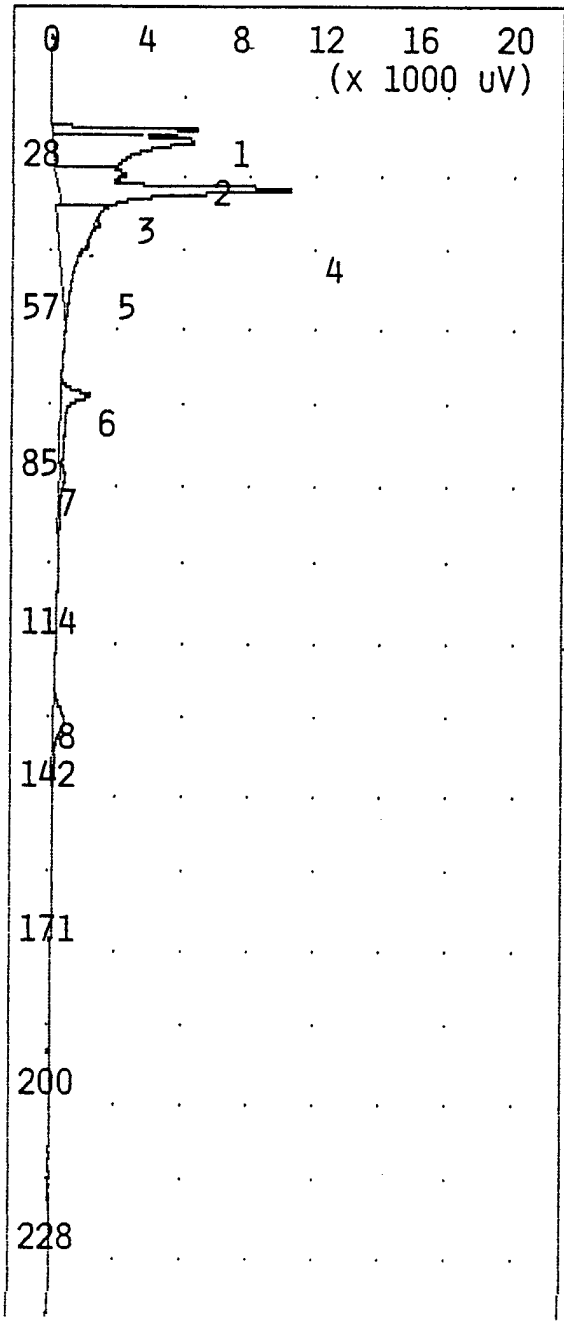
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	7.886	MVS	18.2
2	UNKNOWN	16.78	MVS	20.0
3	UNKNOWN	15.31	MVS	26.3
4	UNKNOWN	2.427	MVS	35.9
5	UNKNOWN	2.504	MVS	40.3
6	BENZENE	4.326	PPB	67.7
7	UNKNOWN	1.259	MVS	83.2
8	TOLUENE	6.166	PPB	127.4
9	ETHYLBENZENE	13.78	PPB	254.9
10	M,P-XYLENE	29.39	PPB	274.9
11	O-XYLENE	10.76	PPB	323.7

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANKET

ANALYSIS #5 10S+ GC FUNCTION ANALYSIS REPORT



LH

TIME PRINTED: AUG 9,95 15:38
SAMPLE TIME: AUG 9,95 15:31

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

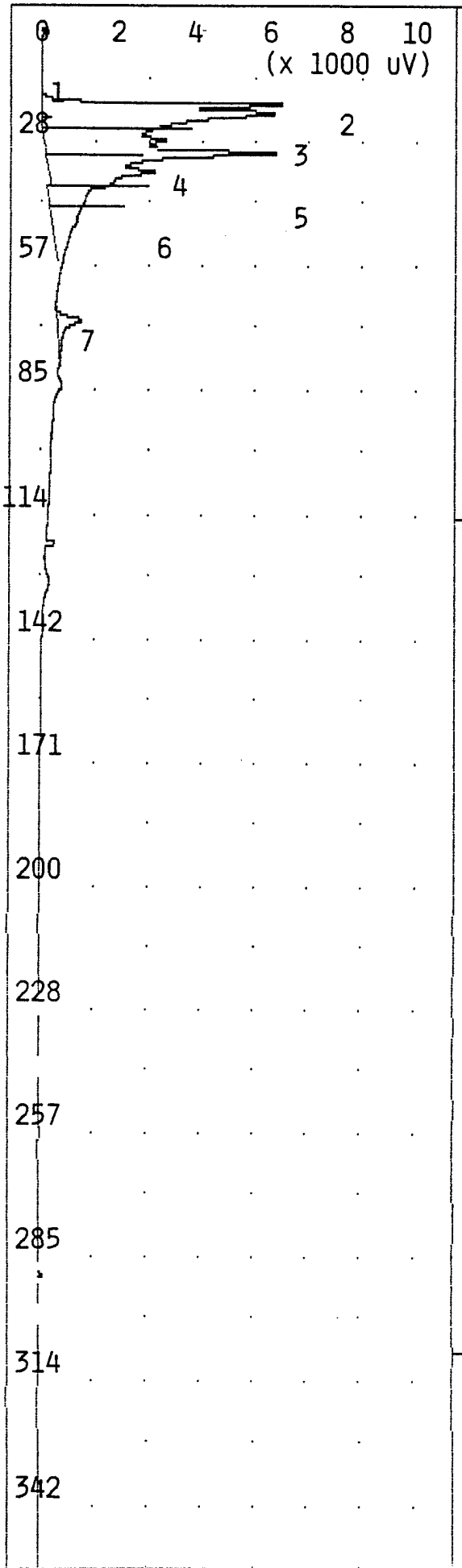
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	8.654 MVS	18.2
2	UNKNOWN	24.20 MVS	20.0
3	UNKNOWN	6.524 MVS	26.2
4	UNKNOWN	41.31 MVS	29.1
5	UNKNOWN	0.274 MVS	35.8
6	BENZENE	3.700 PPB	67.4
7	UNKNOWN	1.037 MVS	82.5
8	TOLUENE	4.448 PPB	126.9
9	ETHYLBENZENE	10.95 PPB	254.1
10	M,P-XYLENE	21.34 PPB	272.2
11	O-XYLENE	23.34 PPB	320.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
873-002BH RESHOT
4.0- 5.0 17G

ANALYSIS #6 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 15:48
SAMPLE TIME: AUG 9,95 15:41

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

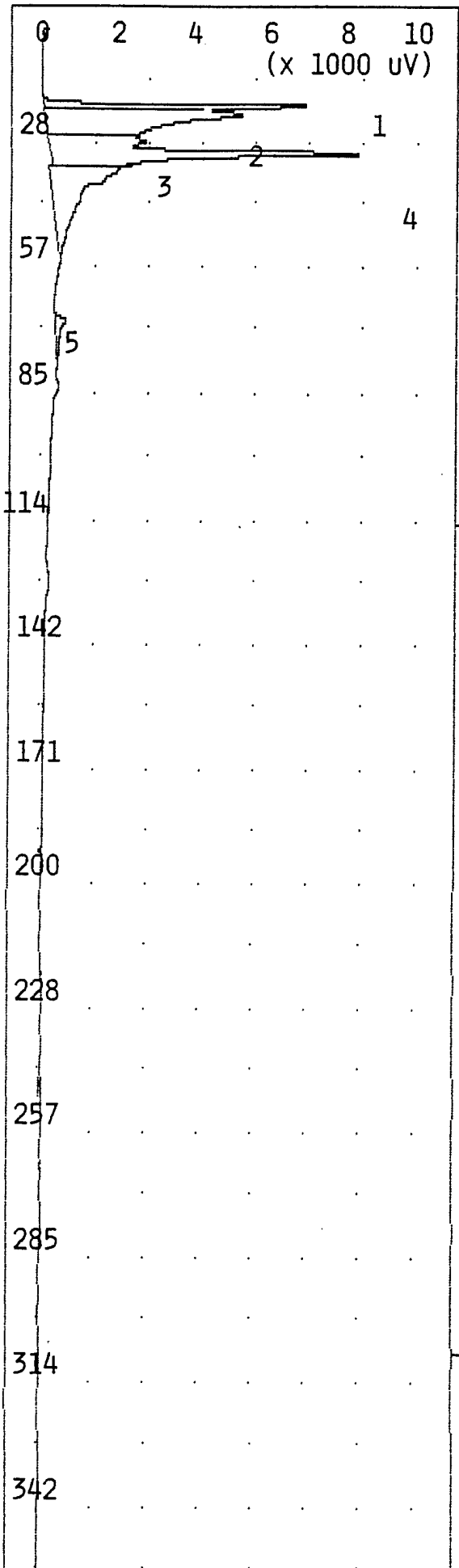
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.276	MVS	16.6
2	UNKNOWN	9.092	MVS	18.2
3	UNKNOWN	24.81	MVS	20.2
4	UNKNOWN	7.329	MVS	26.3
5	UNKNOWN	16.06	MVS	29.2
6	UNKNOWN	17.64	MVS	33.6
7	BENZENE	1.965	PPB	67.7

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
873-002BH RESHOT
9.0-10.0 23G

ANALYSIS #7 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 15:58
SAMPLE TIME: AUG 9,95 15:51

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

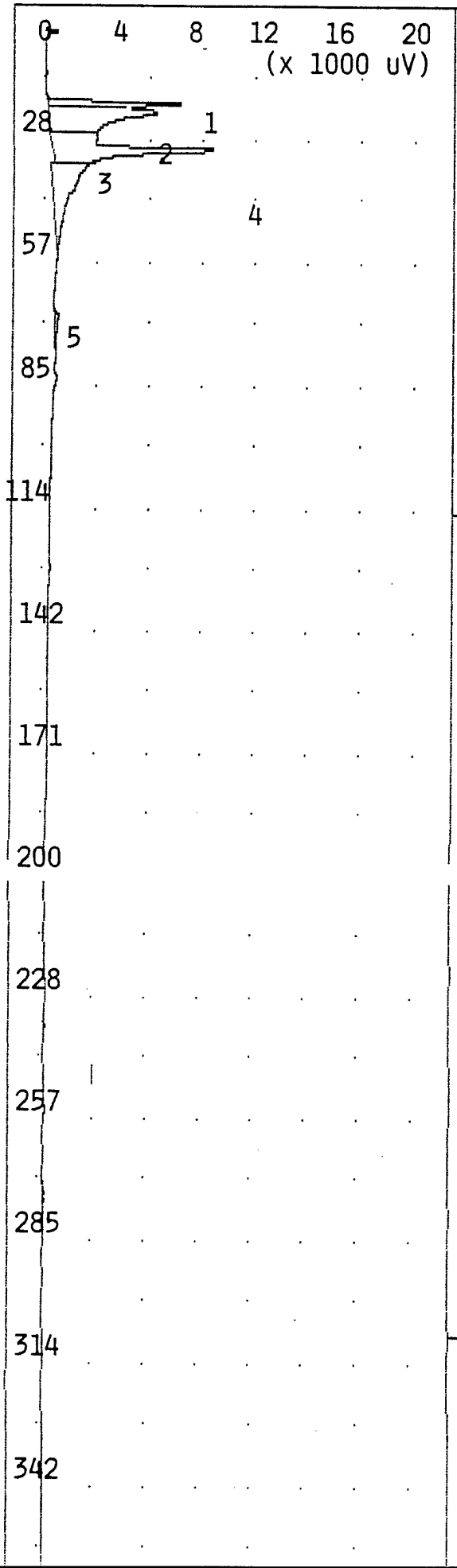
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	10.32 MVS	18.3
2	UNKNOWN	22.08 MVS	20.1
3	UNKNOWN	5.557 MVS	26.2
4	UNKNOWN	32.37 MVS	29.1
5	BENZENE	1.214 PPB	67.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
873-003BH RESHOT
1.5- 2.5 20G

ANALYSIS #8 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 16:08		
SAMPLE TIME: AUG 9,95 16:01		
METHOD		
SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

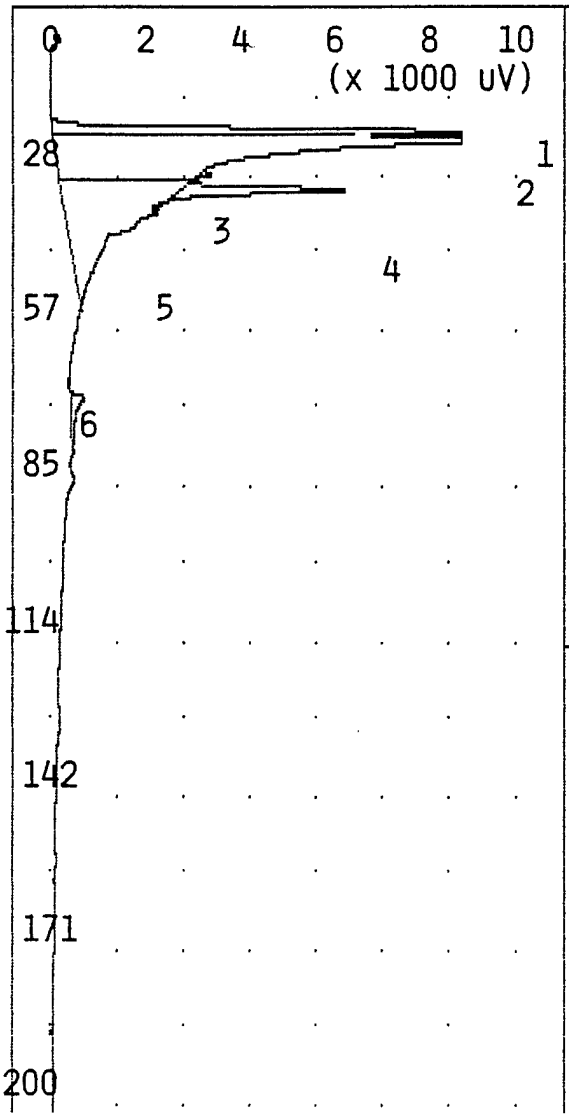
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	9.675 MVS	18.1
2	UNKNOWN	24.55 MVS	20.5
3	UNKNOWN	5.062 MVS	26.2
4	UNKNOWN	37.09 MVS	29.0
5	BENZENE	1.225 PPB	67.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
873-003BH RESHOT
4.0- 5.0 17G

ANALYSIS #9 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 16:18
SAMPLE TIME: AUG 9,95 16:11

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	37	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	14.85	MVS	18.5
2	UNKNOWN	41.96	MVS	20.1
3	UNKNOWN	0.290	MVS	26.2
4	UNKNOWN	29.87	MVS	29.2
5	UNKNOWN	0.261	MVS	33.3
6	BENZENE	1.117	PPB	67.8

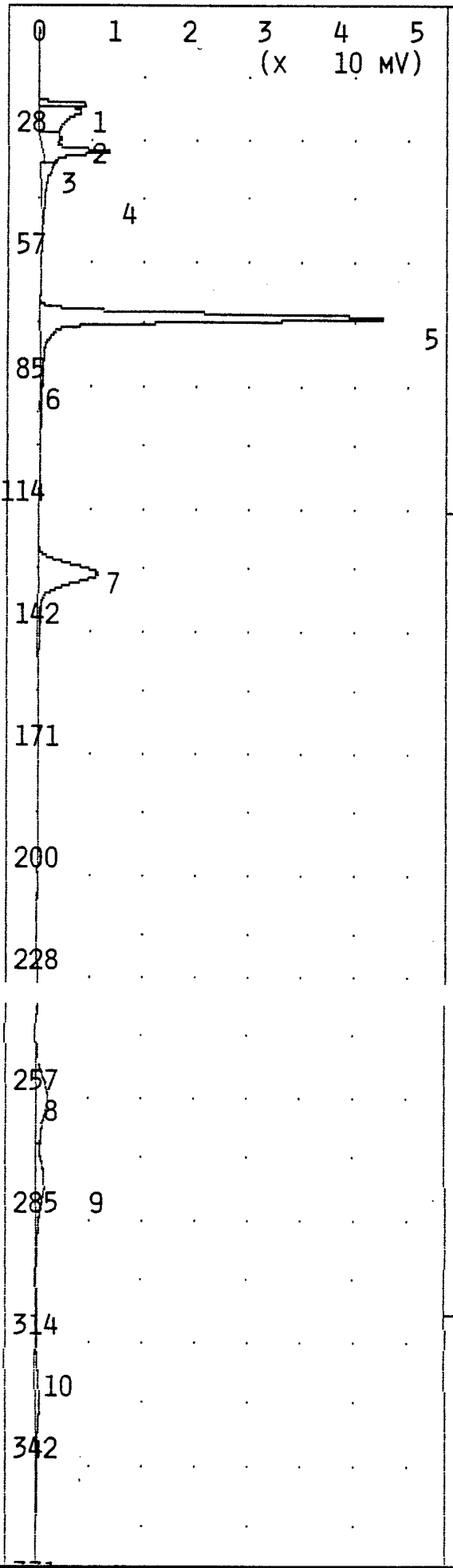
LH

228
257
285
314
342

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
873-003BH
9.0-10.0 26G

ANALYSIS #10 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 16:27
SAMPLE TIME: AUG 9,95 16:20

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	37	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	10.25 MVS	18.4
2	UNKNOWN	23.71 MVS	20.1
3	UNKNOWN	6.452 MVS	26.4
4	UNKNOWN	30.38 MVS	29.3
5	BENZENE	95.44 PPB	67.8
6	UNKNOWN	0.222 MVS	82.6
7	TOLUENE	82.46 PPB	127.4
8	ETHYLBENZENE	67.44 PPB	255.2
9	M,P-XYLENE	139.4 PPB	274.1
10	O-XYLENE	74.96 PPB	323.2

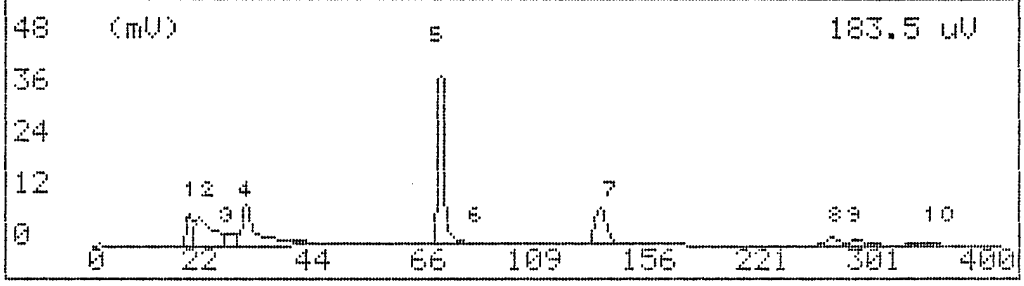
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

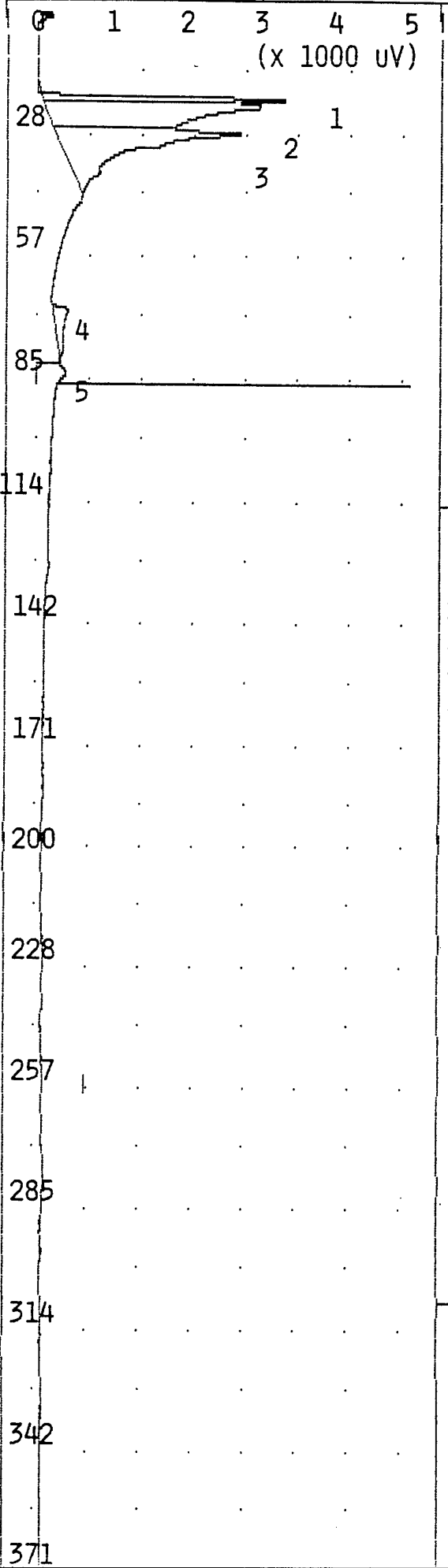
G.C. Ready 10S+ GC Function Aug 9,95 16:32
-- Analysis No 10 -- Run at - Aug 9,95 16:20 -

Pk No	Name	Conc/Area		Alarm	Ret.Time
2	Unknown	23.71	mVS	-No-	20.1 sec
3	Unknown	6.452	mVS	-No-	26.4 sec
4	Unknown	30.38	mVS	-No-	29.3 sec
5	benzene	99.99	ppb	-No-	67.8 sec
6	Unknown	0.222	mVS	-No-	82.6 sec
7	toluene	100.0	ppb	-No-	127.4 sec
8	ethylbenzene	99.98	ppb	-No-	255.2 sec
9	m,p-xylene	199.8	ppb	-No-	274.1 sec
10	o-xylene	99.82	ppb	-No-	323.2 sec

- Detected 10 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #11 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 16:40
SAMPLE TIME: AUG 9,95 16:33

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	37	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

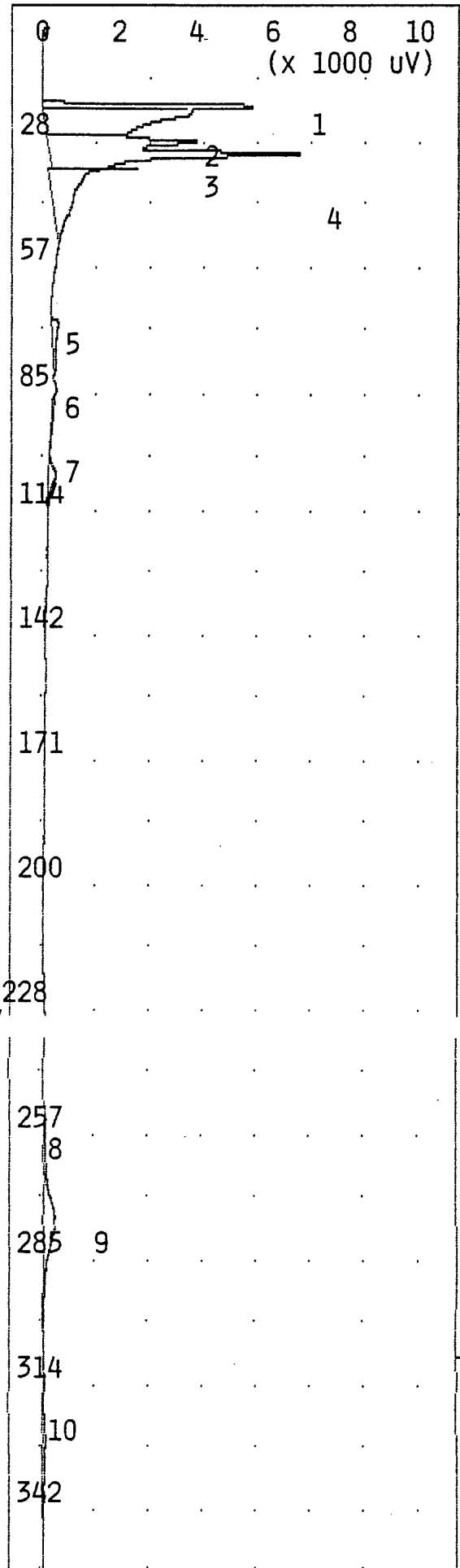
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	4.911	MVS	18.4
2	UNKNOWN	12.90	MVS	20.1
3	UNKNOWN	12.88	MVS	26.4
4	BENZENE	1.220	PPB	68.4
5	UNKNOWN	0.000	MVS	82.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
~~100 PPB BTEX~~
AIR BLANK

ANALYSIS #12 10S+ GC FUNCTION ANALYSIS REPORT



LH/

TIME PRINTED: AUG 9,95 17:03
SAMPLE TIME: AUG 9,95 16:56

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	37	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

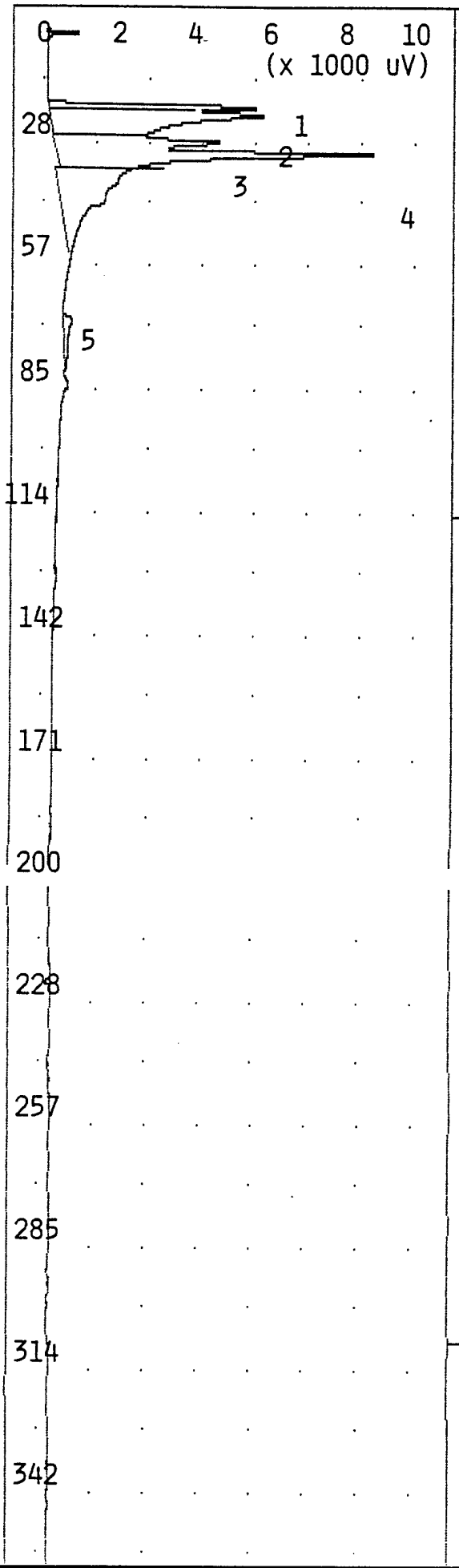
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	9.301	MVS	18.4
2	UNKNOWN	16.54	MVS	20.0
3	UNKNOWN	8.744	MVS	26.4
4	UNKNOWN	23.18	MVS	29.4
5	BENZENE	1.315	PPB	68.0
6	UNKNOWN	0.190	MVS	83.0
7	UNKNOWN	0.903	MVS	101.7
8	ETHYLBENZENE	2.688	PPB	254.6
9	M,P-XYLENE	47.94	PPB	274.1
10	O-XYLENE	8.988	PPB	321.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
801-002BH
1.5- 2.5 17G

ANALYSIS #13 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 17:13
SAMPLE TIME: AUG 9,95 17:06

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	37	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

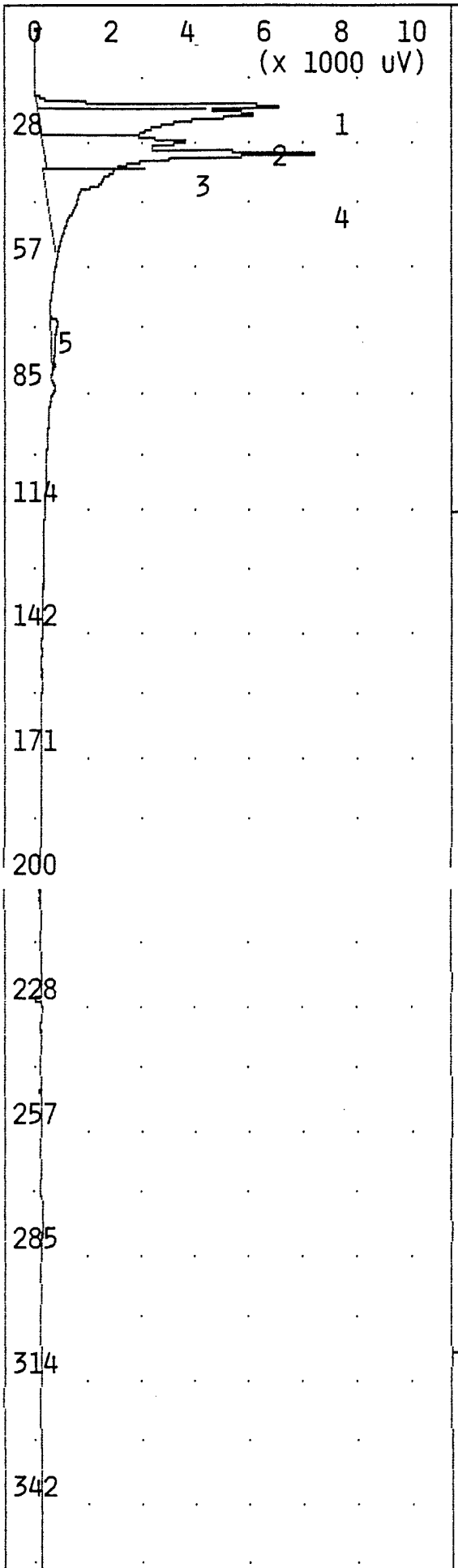
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	8.308 MVS	18.4
2	UNKNOWN	21.96 MVS	20.2
3	UNKNOWN	10.19 MVS	26.5
4	UNKNOWN	36.86 MVS	29.4
5	BENZENE	1.351 PPB	68.1

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
801-002BH
4.0- 5.0 14G

ANALYSIS #14 10S+ GC FUNCTION ANALYSIS REPORT



LH

TIME PRINTED: AUG 9,95 17:23
SAMPLE TIME: AUG 9,95 17:16

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	37	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

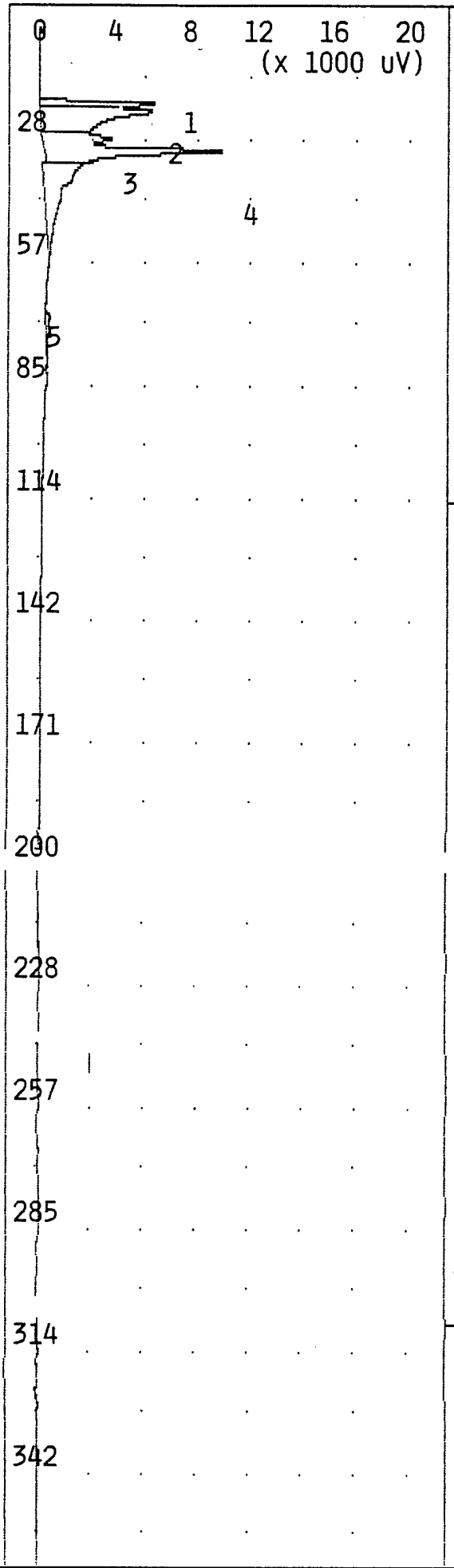
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	10.48 MVS	18.4
2	UNKNOWN	22.52 MVS	20.2
3	UNKNOWN	9.080 MVS	26.4
4	UNKNOWN	31.38 MVS	29.3
5	BENZENE	1.284 PPB	67.7

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
801-002BH
9.0-10.0 17G

ANALYSIS #15 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 17:32
SAMPLE TIME: AUG 9,95 17:26

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	37	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

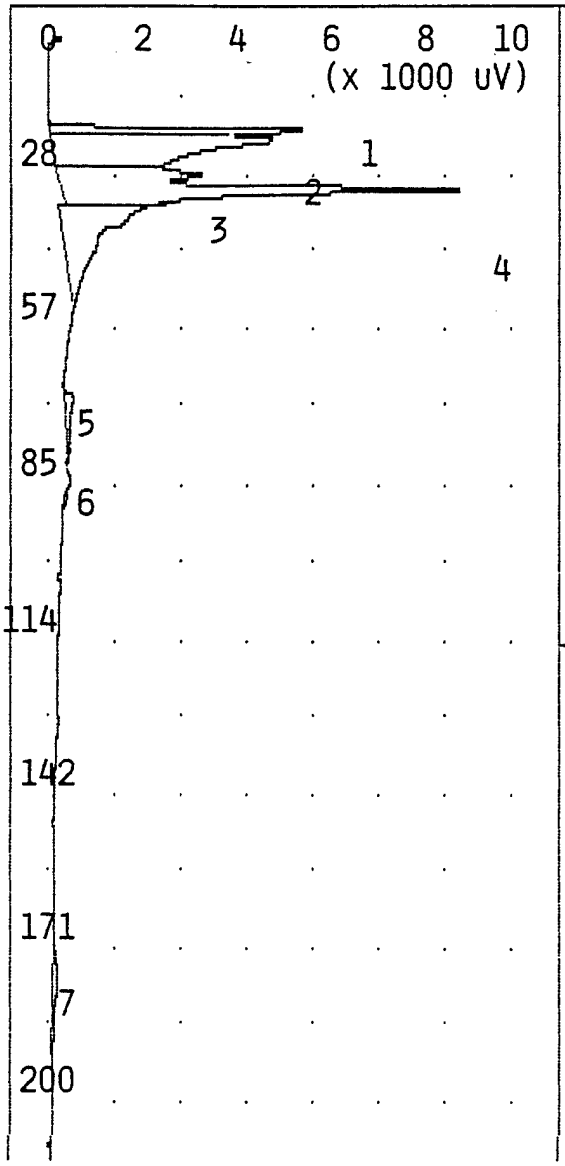
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	8.891 MVS	18.2
2	UNKNOWN	23.66 MVS	20.0
3	UNKNOWN	8.525 MVS	26.3
4	UNKNOWN	38.07 MVS	29.2
5	BENZENE	1.264 PPB	68.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
801-001BH
1.5- 2.5 17G

ANALYSIS #16 10S+ GC FUNCTION ANALYSIS REPORT



LH

228
257
285
314
342

TIME PRINTED: AUG 9,95 17:42
SAMPLE TIME: AUG 9,95 17:35

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	37	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

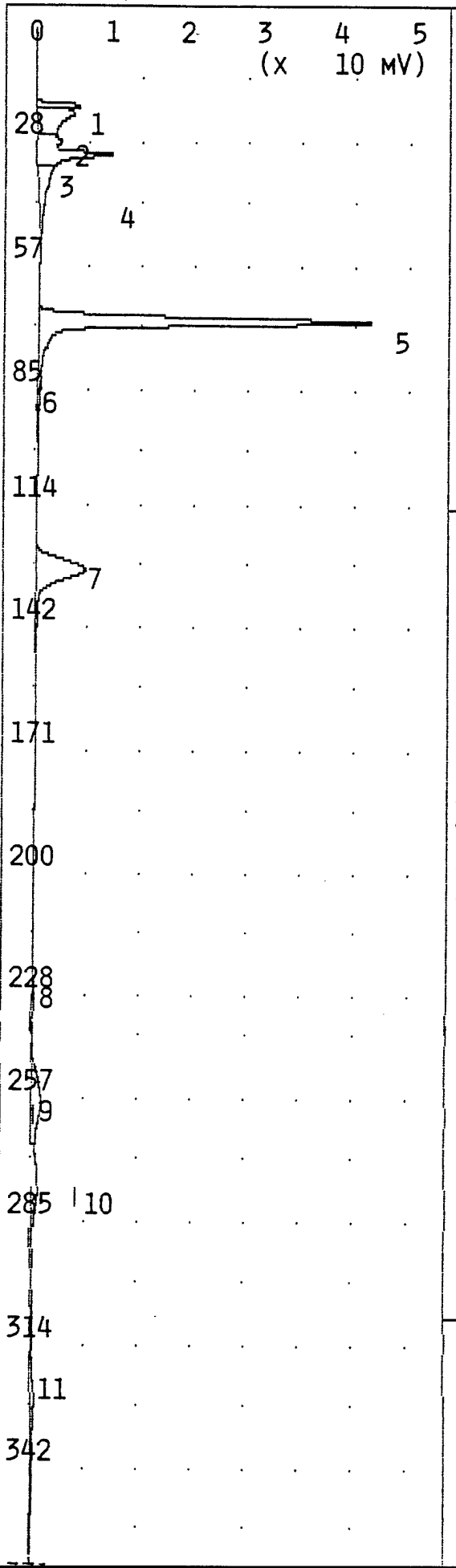
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	7.995	MVS	18.2
2	UNKNOWN	20.24	MVS	20.0
3	UNKNOWN	7.111	MVS	26.4
4	UNKNOWN	30.88	MVS	29.2
5	BENZENE	1.260	PPB	68.1
6	UNKNOWN	0.256	MVS	82.6
7	UNKNOWN	0.917	MVS	176.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
801-001BH
4.0- 5.0 17G

ANALYSIS #17 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 9,95 17:52
SAMPLE TIME: AUG 9,95 17:45

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	38	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	8.805 MVS	18.4
2	UNKNOWN	20.88 MVS	20.2
3	UNKNOWN	7.429 MVS	26.5
4	UNKNOWN	34.26 MVS	29.4
5	BENZENE	95.45 PPB	68.0
6	UNKNOWN	0.128 MVS	82.8
7	TOLUENE	83.85 PPB	127.4
8	UNKNOWN	0.392 MVS	228.4
9	ETHYLBENZENE	75.26 PPB	255.2
10	M,P-XYLENE	150.5 PPB	274.6
11	O-XYLENE	78.22 PPB	323.4

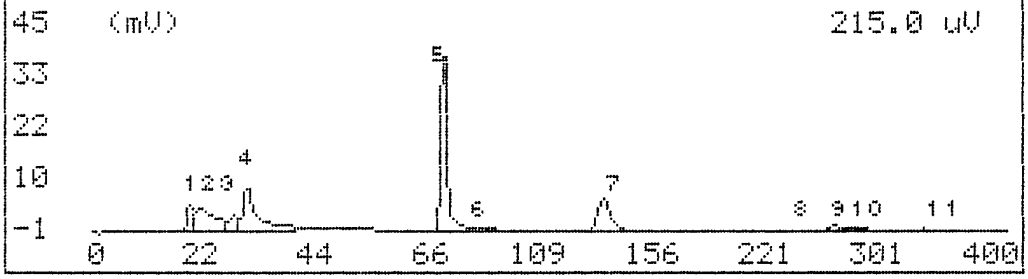
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
100 PPB BTEX

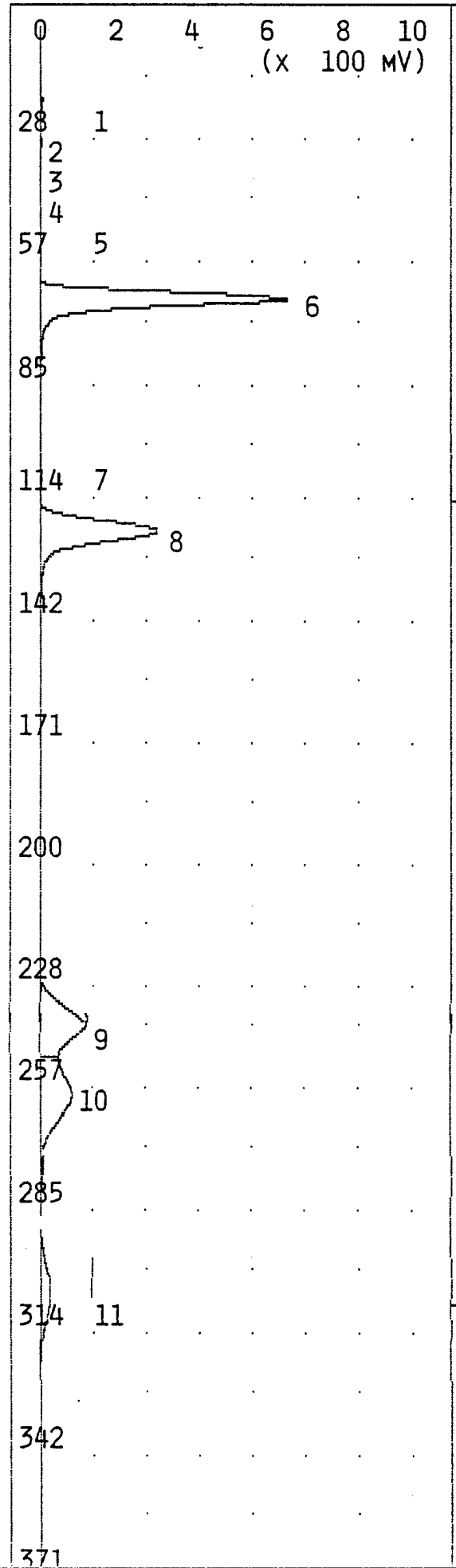
G.C. Ready 10S+ GC Function Aug 9,95 17:56
-- Analysis No 17 -- Run at - Aug 9,95 17:45 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	7.429 mVS	-No-	26.5 sec
4	Unknown	34.26 mVS	-No-	29.4 sec
5	benzene	100.0 ppb	-No-	60.0 sec
6	Unknown	0.128 mVS	-No-	82.8 sec
7	toluene	100.0 ppb	-No-	127.4 sec
8	Unknown	0.392 mVS	-No-	228.4 sec
9	ethylbenzene	100.0 ppb	-No-	255.2 sec
10	m,p-xylene	200.0 ppb	-No-	274.6 sec
11	o-xylene	100.4 ppb	-No-	323.4 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #2 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 15,95 10:17
SAMPLE TIME: AUG 15,95 10:10

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	32	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	9.065	MVS	17.4
2	UNKNOWN	16.71	MVS	19.0
3	UNKNOWN	6.305	MVS	25.0
4	UNKNOWN	22.35	MVS	27.4
5	UNKNOWN	0.083	MVS	36.8
6	BENZENE	1.976	PPM	63.8
7	UNKNOWN	0.196	MVS	107.8
8	TOLUENE	2.915	PPM	120.1
9	ETHYLBENZENE	3.230	PPM	239.2
10	M,P-XYLENE	6.258	PPM	256.8
11	O-XYLENE	3.166	PPM	302.6

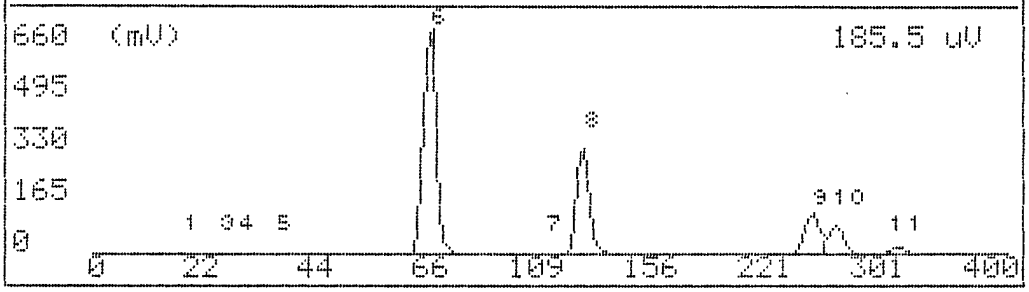
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
1 PPM BTEX

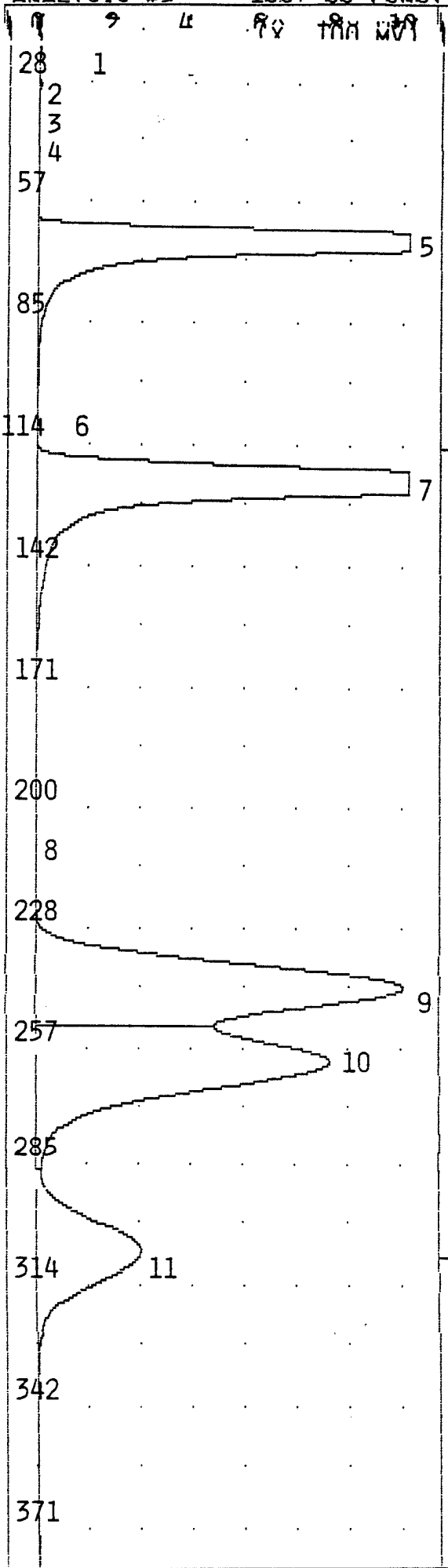
G.C. Ready 10S+ GC Function Aug 15,95 10:21
-- Analysis No 2 -- Run at - Aug 15,95 10:10 -

Pk No	Name	Conc/Area		Alarm	Ret.Time	
3	Unknown	6.305	mVS	-No-	25.0	sec
4	Unknown	22.345	mVS	-No-	27.4	sec
5	Unknown	0.083	mVS	-No-	36.8	sec
6	benzene	1.000	ppm	-No-	63.8	sec
7	Unknown	0.196	mVS	-No-	107.6	sec
8	toluene	1.000	ppm	-No-	120.1	sec
9	ethylbenzene	1.000	ppm	-No-	239.2	sec
10	m,p-xylene	2.000	ppm	-No-	256.8	sec
11	o-xylene	1.001	ppm	-No-	302.6	sec

- Detected 11 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #3 10S+ GC FUNCTION ANALYSIS REPORT



SAMPLE TIME: METHOD TIME: Aug 15,95 10:31 Aug 15,95 10:52

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	6.086	MVS	17.3
2	UNKNOWN	20.64	MVS	19.2
3	UNKNOWN	6.526	MVS	25.0
4	UNKNOWN	34.44	MVS	27.6
5	BENZENE	4.733	PPM	63.8
6	UNKNOWN	3.838	MVS	107.8
7	TOLUENE	7.358	PPM	120.9
8	UNKNOWN	3.111	MVS	208.2
9	ETHYLBENZENE	8.081	PPM	240.8
10	M,P-XYLENE	18.60	PPM	258.4
11	O-XYLENE	10.56	PPM	304.2

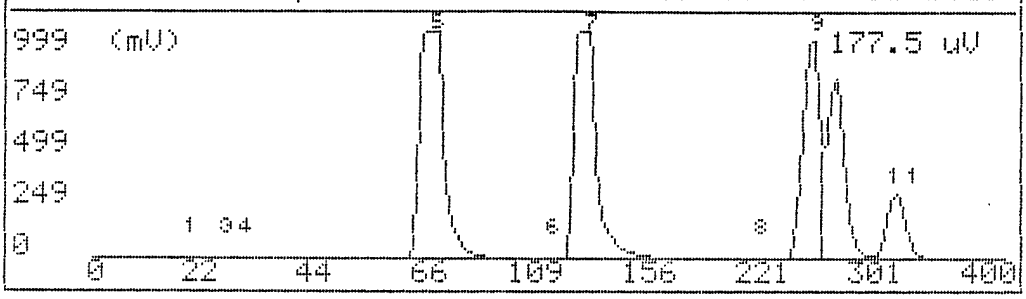
NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
~~1~~ 10 PPM BTEX
10 pB

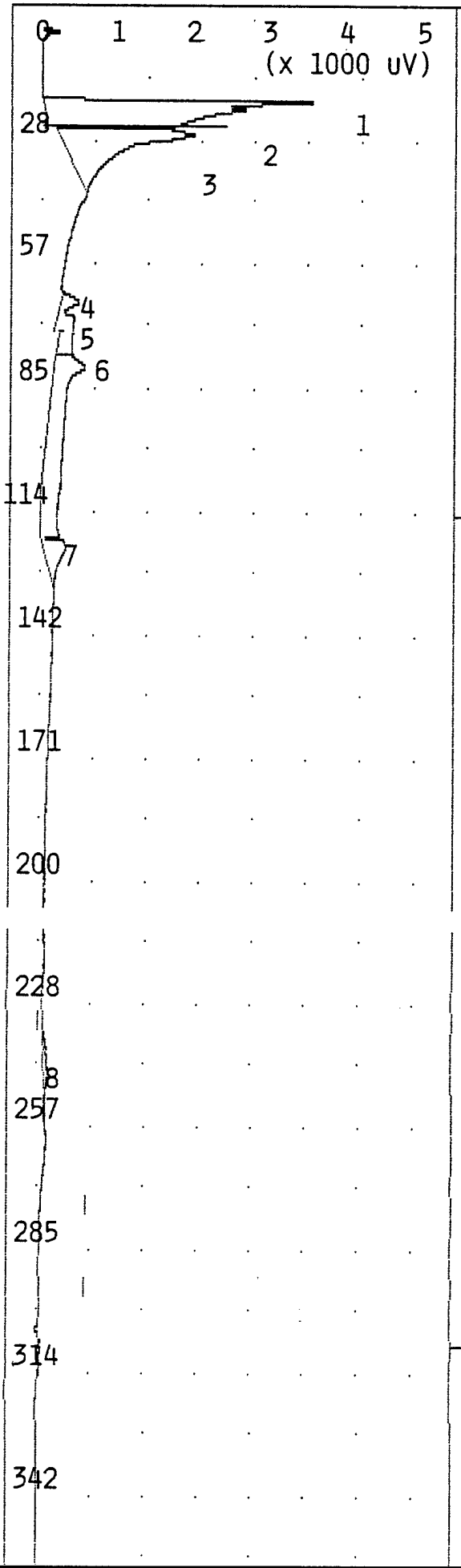
G.C. Ready 10S+ GC Function Aug 15,95 10:36
-- Analysis No 3 -- Run at - Aug 15,95 10:24 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
3	Unknown	6.526 mVS	-No-	25.0 sec
4	Unknown	34.44 mVS	-No-	27.6 sec
5	benzene	10.00 ppm	-No-	63.8 sec
6	Unknown	3.838 mVS	-No-	107.8 sec
7	toluene	10.00 ppm	-No-	120.9 sec
8	Unknown	3.111 mVS	-No-	208.2 sec
9	ethylbenzene	10.00 ppm	-No-	240.8 sec
10	m,p-xylene	20.00 ppm	-No-	258.4 sec
11	o-xylene	10.00 ppm	-No-	304.2 sec

- Detected 11 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #6 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 15,95 11:05
SAMPLE TIME: AUG 15,95 10:58

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

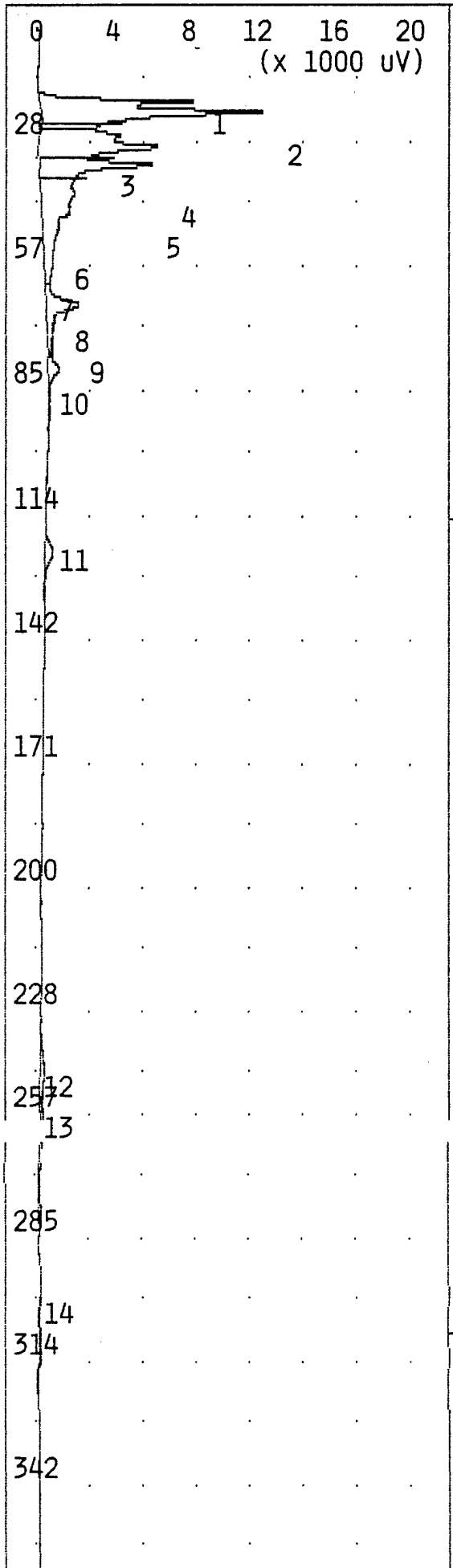
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	4.912	MVS	17.5
2	UNKNOWN	11.44	MVS	19.2
3	UNKNOWN	9.454	MVS	25.1
4	BENZENE	0.490	PPB	63.8
5	UNKNOWN	1.956	MVS	68.4
6	UNKNOWN	10.82	MVS	78.8
7	TOLUENE	3.589	PPB	121.0
8	ETHYLBENZENE	1.228	PPB	241.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #7 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 15,95 11:15
SAMPLE TIME: AUG 15,95 11:08

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

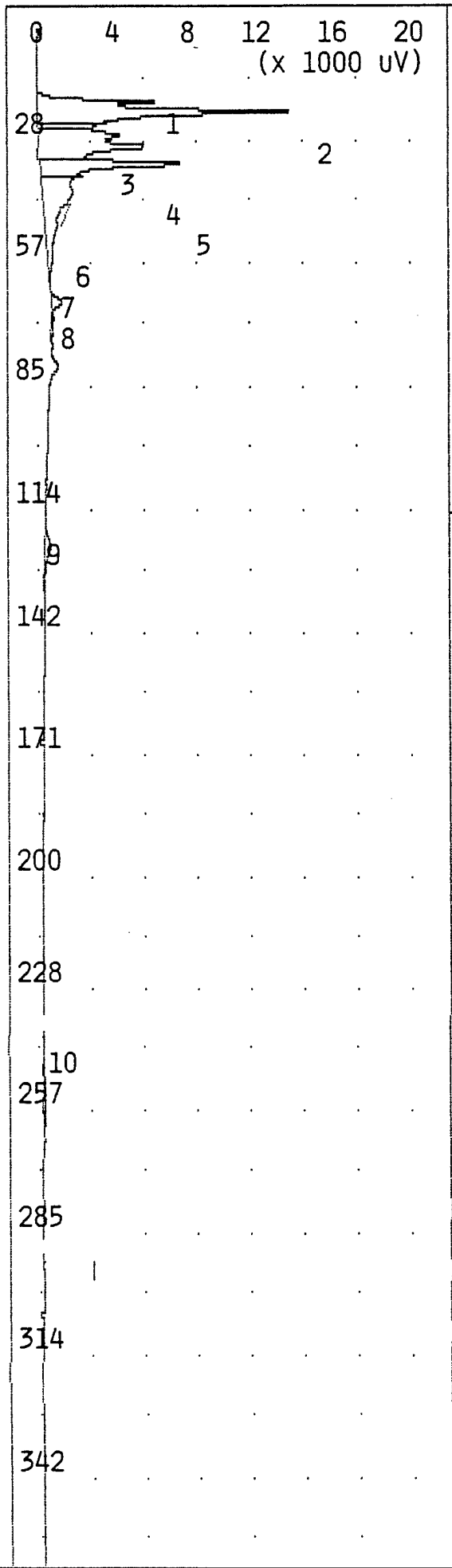
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	11.14	MVS	17.4
2	UNKNOWN	33.78	MVS	19.9
3	UNKNOWN	7.634	MVS	25.2
4	UNKNOWN	19.00	MVS	27.8
5	UNKNOWN	35.45	MVS	31.9
6	UNKNOWN	1.838	MVS	38.5
7	UNKNOWN	0.160	MVS	46.1
8	BENZENE	6.749	PPB	64.1
9	UNKNOWN	0.230	MVS	67.3
10	UNKNOWN	3.096	MVS	78.8
11	TOLUENE	3.262	PPB	120.4
12	ETHYLBENZENE	5.478	PPB	241.0
13	M,P-XYLENE	9.179	PPB	257.8
14	O-XYLENE	6.115	PPB	298.6

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-001MW
18.0-20.0 14G

ANALYSIS #8 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 15,95 11:25
SAMPLE TIME: AUG 15,95 11:18

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

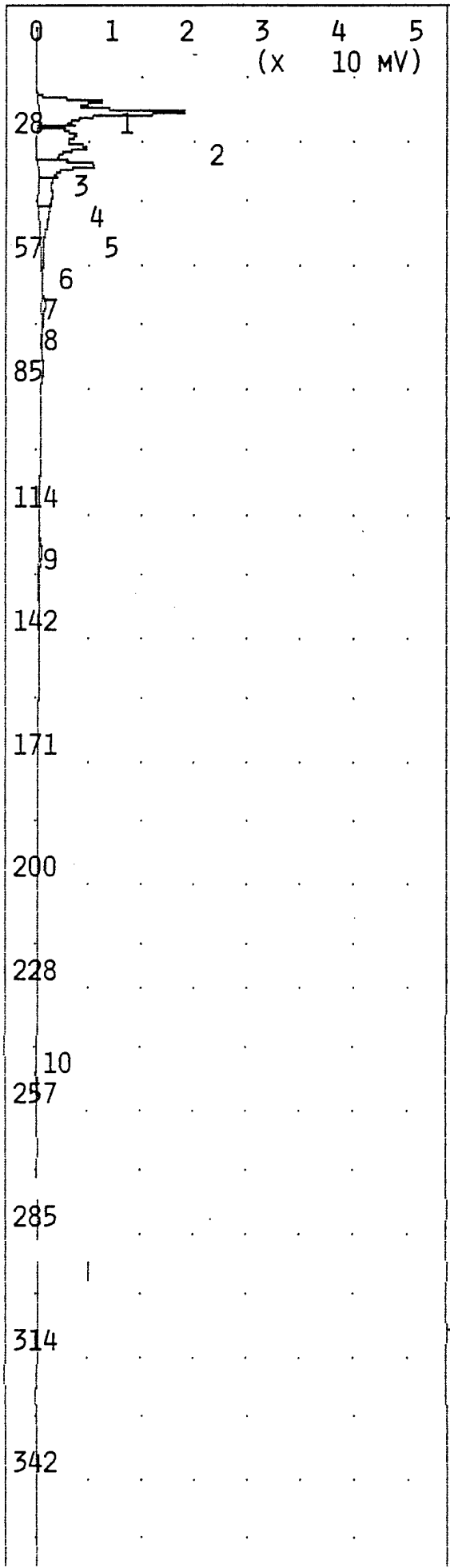
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	8.598	MVS	17.4
2	UNKNOWN	33.66	MVS	19.9
3	UNKNOWN	9.510	MVS	25.2
4	UNKNOWN	15.00	MVS	27.8
5	UNKNOWN	33.74	MVS	31.9
6	UNKNOWN	1.070	MVS	38.6
7	BENZENE	1.203	PPB	64.2
8	UNKNOWN	0.334	MVS	67.7
9	TOLUENE	2.255	PPB	120.6
10	ETHYLBENZENE	0.427	PPB	241.0

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-001MW
20.0-22.0 23G

ANALYSIS #9 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 15,95 11:35
SAMPLE TIME: AUG 15,95 11:28

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

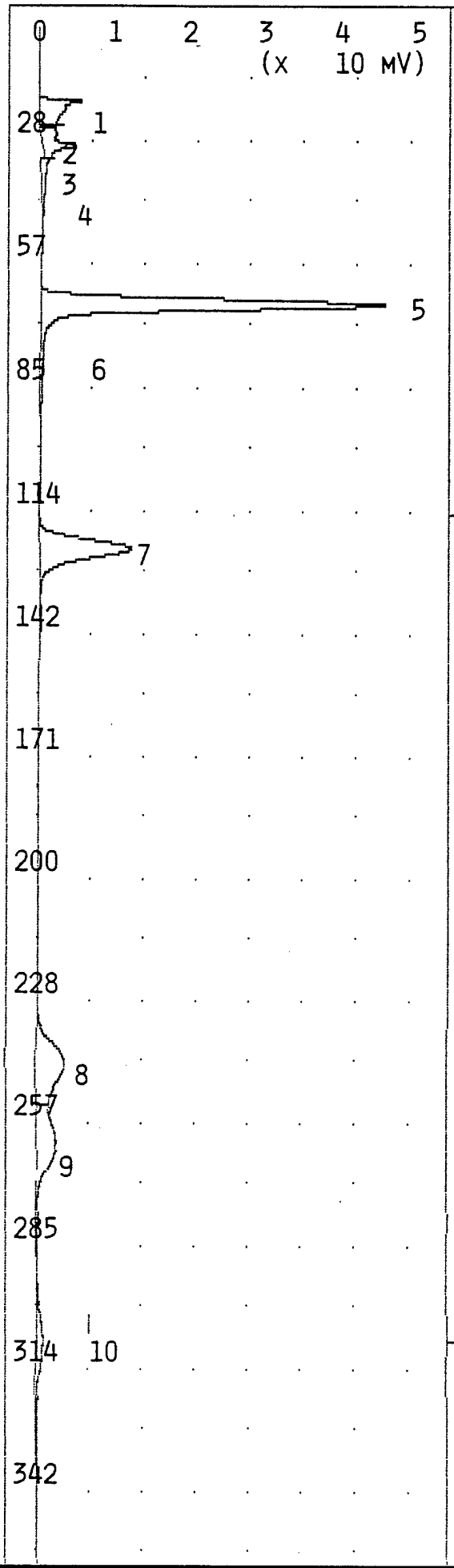
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	12.82	MVS	17.6
2	UNKNOWN	47.17	MVS	20.0
3	UNKNOWN	11.14	MVS	25.3
4	UNKNOWN	17.33	MVS	27.9
5	UNKNOWN	22.99	MVS	32.0
6	UNKNOWN	17.34	MVS	39.0
7	BENZENE	1.209	PPB	64.4
8	UNKNOWN	0.329	MVS	67.6
9	TOLUENE	2.800	PPB	121.0
10	ETHYLBENZENE	1.249	PPB	241.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-001MW
22.0-24.0 17G

ANALYSIS #10 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 15,95 11:45
SAMPLE TIME: AUG 15,95 11:38

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

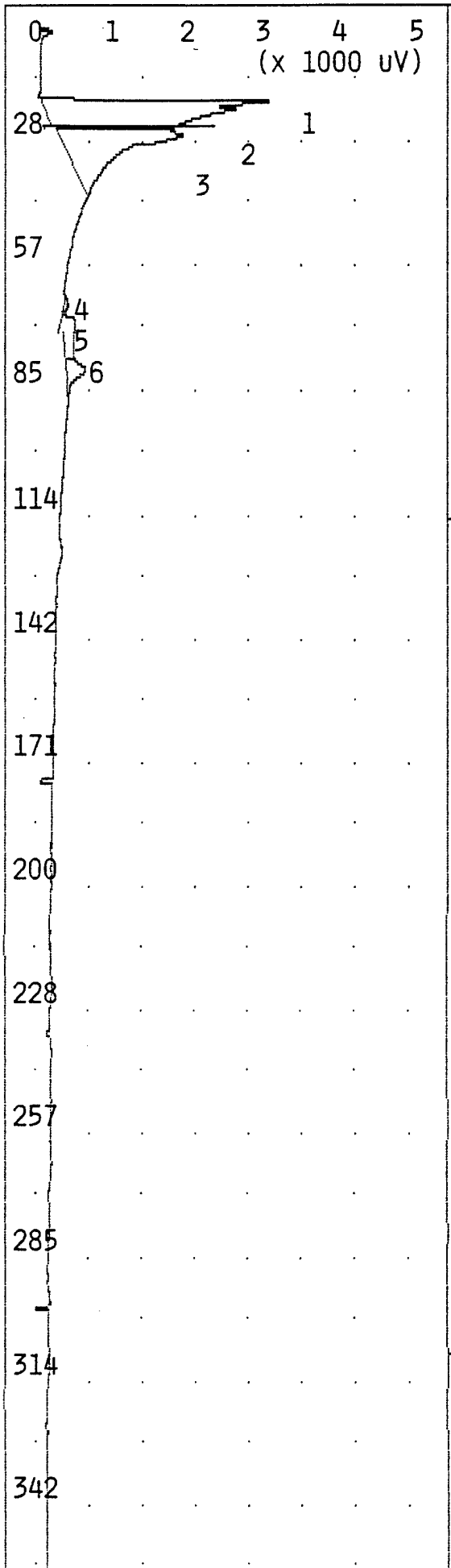
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	7.353 MVS	17.5
2	UNKNOWN	15.52 MVS	19.2
3	UNKNOWN	5.030 MVS	25.3
4	UNKNOWN	18.54 MVS	27.8
5	BENZENE	103.9 PPB	64.5
6	UNKNOWN	0.411 MVS	79.2
7	TOLUENE	99.87 PPB	121.2
8	ETHYLBENZENE	97.34 PPB	241.6
9	M,P-XYLENE	193.2 PPB	259.7
10	O-XYLENE	97.35 PPB	305.8

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANG
100 PPB BTEX

ANALYSIS #11 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 15,95 11:55
SAMPLE TIME: AUG 15,95 11:48

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

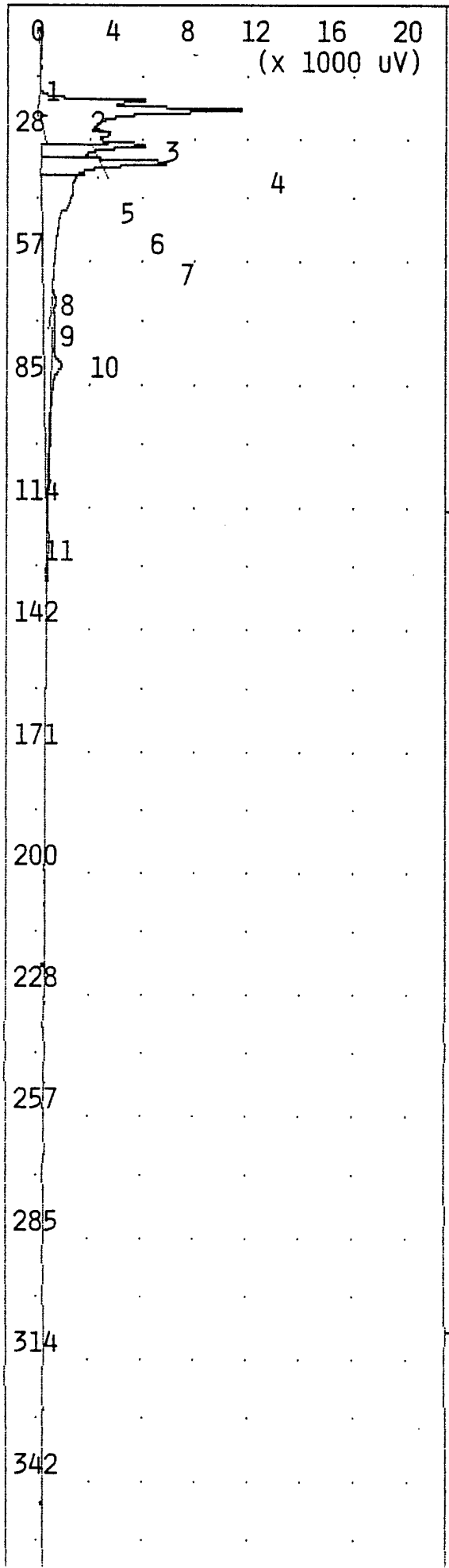
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	4.283 MVS	17.5
2	UNKNOWN	11.51 MVS	19.2
3	UNKNOWN	9.287 MVS	25.2
4	BENZENE	0.062 PPB	64.5
5	UNKNOWN	1.226 MVS	68.2
6	UNKNOWN	1.137 MVS	79.3

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #12 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 15,95 12:05
SAMPLE TIME: AUG 15,95 11:58

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

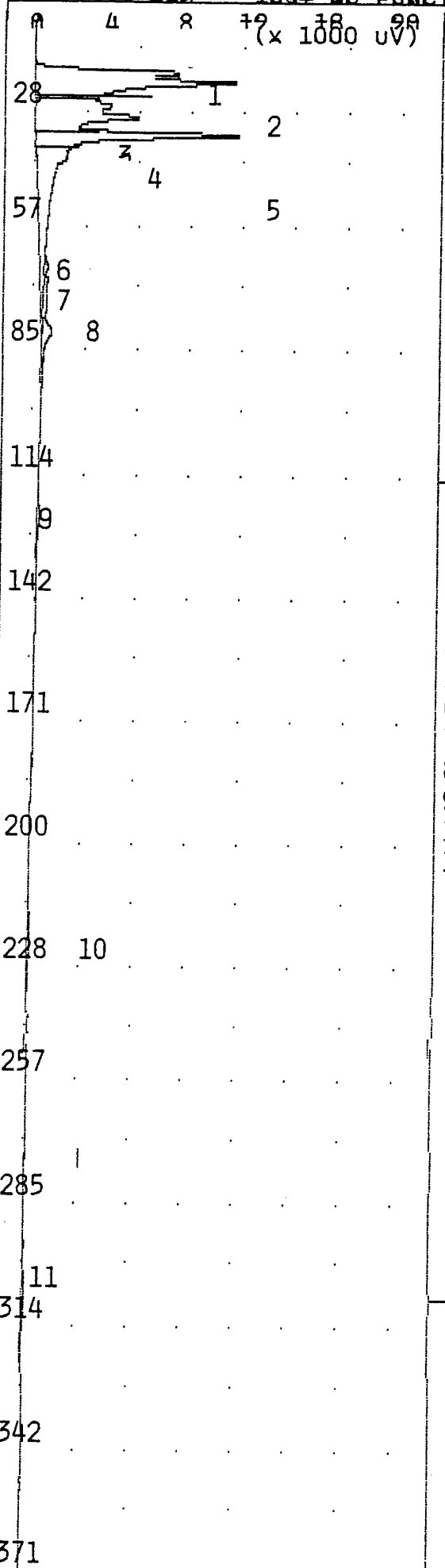
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	2.188	MVS	1.2
2	UNKNOWN	0.344	MVS	16.4
3	UNKNOWN	7.225	MVS	17.6
4	UNKNOWN	37.44	MVS	20.0
5	UNKNOWN	1.017	MVS	25.3
6	UNKNOWN	14.69	MVS	27.9
7	UNKNOWN	60.10	MVS	32.1
8	BENZENE	0.336	PPB	64.4
9	UNKNOWN	1.336	MVS	67.8
10	UNKNOWN	3.176	MVS	79.4
11	TOLUENE	0.892	PPB	120.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-001MW
26.0-28.0 20G

ANALYSIS #13 1051 GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 15,95 12:15
SAMPLE TIME: AUG 15,95 12:08

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

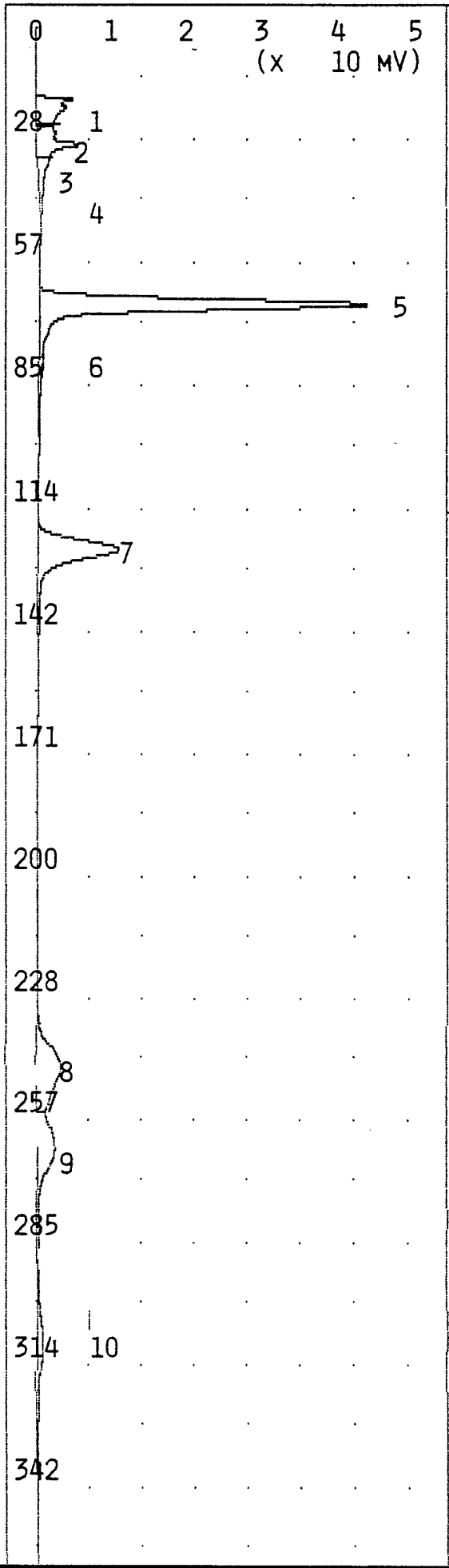
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	12.45	MVS	17.8
2	UNKNOWN	34.03	MVS	20.0
3	UNKNOWN	9.251	MVS	25.4
4	UNKNOWN	14.35	MVS	28.0
5	UNKNOWN	50.61	MVS	32.2
6	BENZENE	0.439	PPB	64.6
7	UNKNOWN	1.547	MVS	67.8
8	UNKNOWN	2.360	MVS	79.7
9	TOLUENE	1.260	PPB	121.4
10	ETHYLBENZENE	1.563	PPB	217.8
11	O-XYLENE	7.896	PPB	299.7

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANGB
591-001MW
28.0-30.0 11G

ANALYSIS #14 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 15,95 12:24
SAMPLE TIME: AUG 15,95 12:18

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

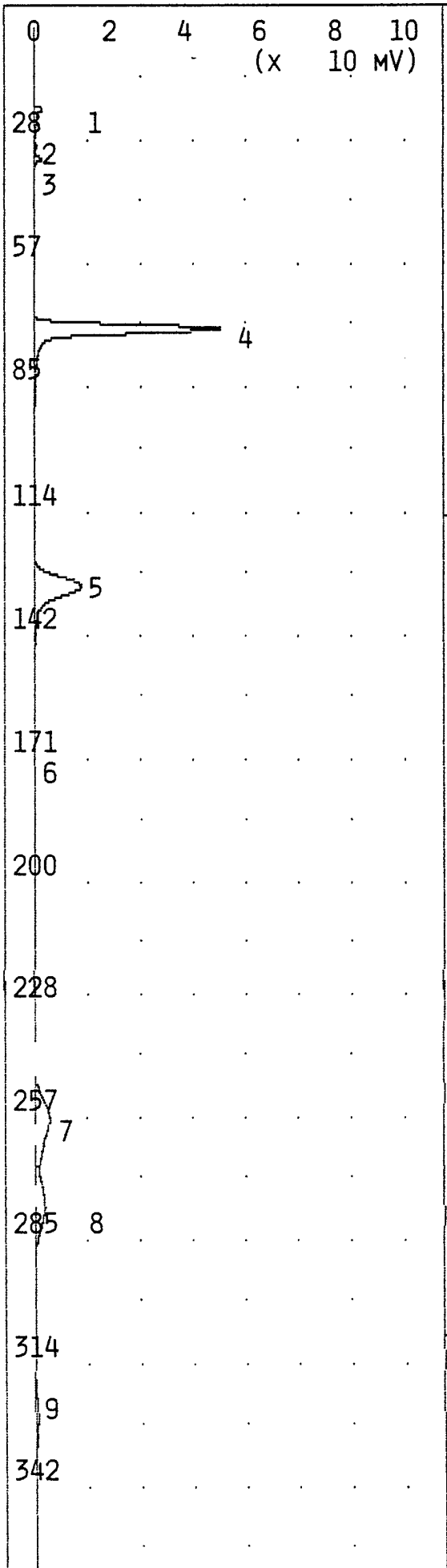
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	6.213	MVS	17.4
2	UNKNOWN	16.74	MVS	19.2
3	UNKNOWN	5.761	MVS	25.2
4	UNKNOWN	22.27	MVS	27.9
5	BENZENE	105.0	PPB	64.8
6	UNKNOWN	0.178	MVS	79.4
7	TOLUENE	91.05	PPB	121.8
8	ETHYLBENZENE	87.26	PPB	242.9
9	M,P-XYLENE	161.0	PPB	260.8
10	O-XYLENE	84.76	PPB	307.4

NOTES

JOE BYRD, JR.
MINNEAPOLIS ANG
100 PPB BTEX

ANALYSIS #1 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 17,95 09:38
SAMPLE TIME: AUG 17,95 09:31

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	29	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	8.435 MVS	19.4
2	UNKNOWN	1.574 MVS	28.1
3	UNKNOWN	4.187 MVS	31.0
4	UNKNOWN	130.9 MVS	70.5
5	UNKNOWN	80.26 MVS	129.4
6	UNKNOWN	0.721 MVS	171.8
7	UNKNOWN	54.36 MVS	256.0
8	UNKNOWN	41.30 MVS	274.4
9	UNKNOWN	16.51 MVS	322.9

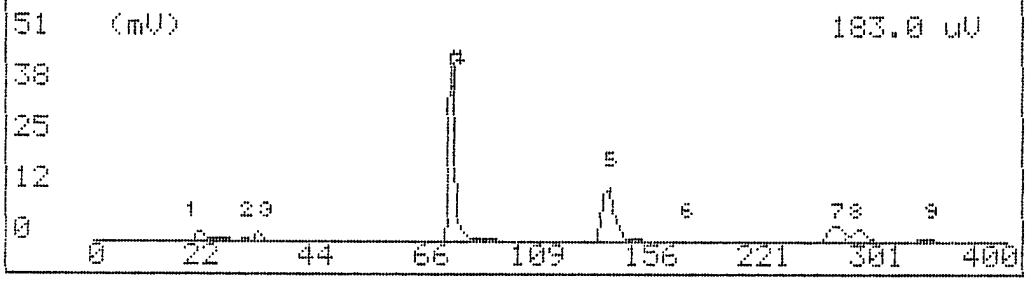
NOTES

JOE BYRD, JR,
MINNEAPOLIS ANGB
100 PPB BTEX

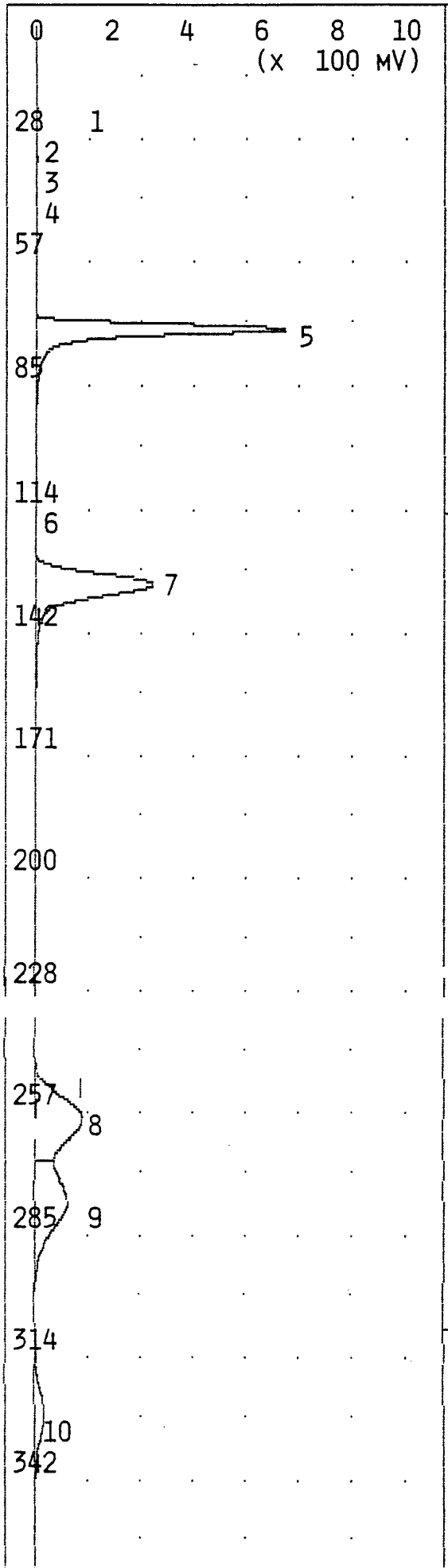
G.C. Ready 10S+ GC Function Aug 17,95 09:44
-- Analysis No 1 -- Run at - Aug 17,95 09:31 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
1	Unknown	8.435 mVS	-No-	19.4 sec
2	Unknown	1.574 mVS	-No-	28.1 sec
3	Unknown	4.187 mVS	-No-	31.0 sec
4	benzene	100.0 ppb	-No-	70.5 sec
5	toluene	100.0 ppb	-No-	129.4 sec
6	Unknown	0.721 mVS	-No-	171.8 sec
7	ethylbenzene	100.0 ppb	-No-	256.0 sec
8	m,p-xylene	200.1 ppb	-No-	274.4 sec
9	o-xylene	100.9 ppb	-No-	322.9 sec

- Detected 9 peaks. [405 sec]



ANALYSIS #2 10S+ GC FUNCTION ANALYSIS REPORT



LH

TIME PRINTED: AUG 17,95 09:52
SAMPLE TIME: AUG 17,95 09:45

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	31	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	7.211	MVS	19.6
2	UNKNOWN	13.14	MVS	21.6
3	UNKNOWN	5.253	MVS	28.4
4	UNKNOWN	11.19	MVS	31.2
5	BENZENE	1.709	PPM	70.9
6	UNKNOWN	0.271	MVS	109.8
7	TOLUENE	2.638	PPM	129.6
8	ETHYLBENZENE	3.170	PPM	257.0
9	M,P-XYLENE	6.696	PPM	275.7
10	O-XYLENE	2.765	PPM	324.8

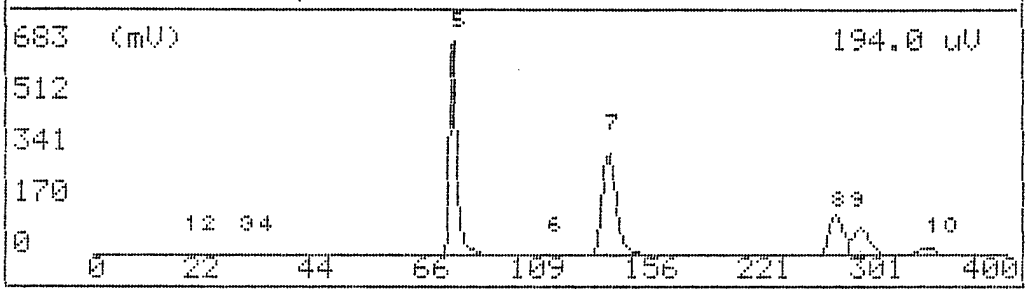
NOTES

JOE BYRD, JR,
MINNEAPOLIS ANB
1 PPM BTEX

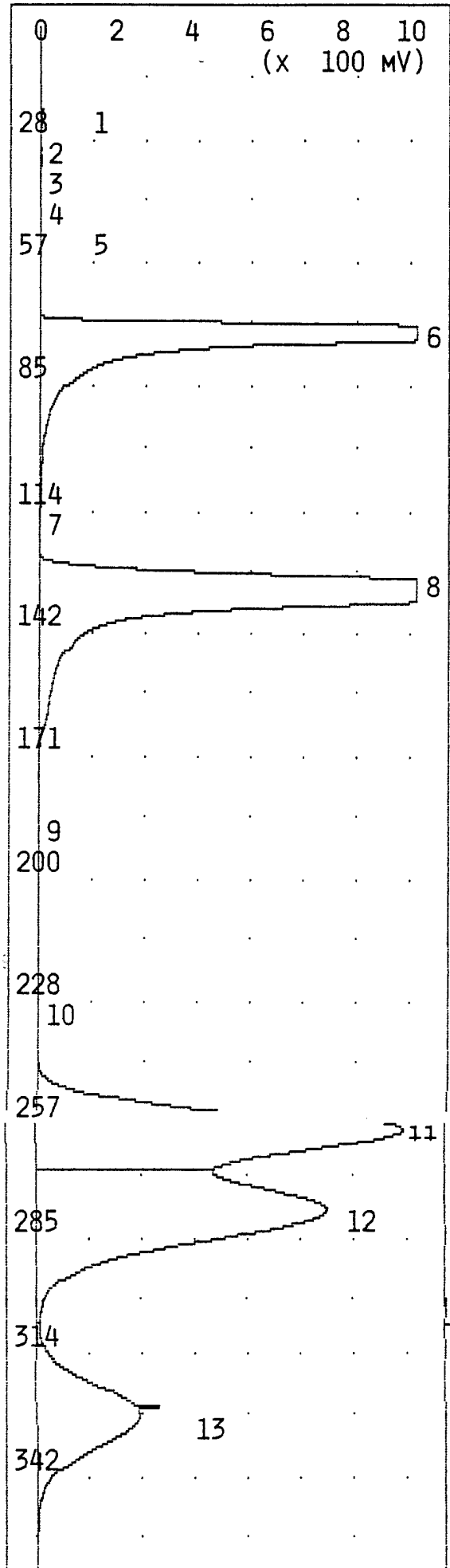
G.C. Ready 10S+ GC Function Aug 17,95 09:57
-- Analysis No 2 -- Run at - Aug 17,95 09:45 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
2	Unknown	13.14 mVS	-No-	21.6 sec
3	Unknown	5.253 mVS	-No-	28.4 sec
4	Unknown	11.19 mVS	-No-	31.2 sec
5	benzene	1.000 ppm	-No-	70.9 sec
6	Unknown	0.271 mVS	-No-	109.8 sec
7	toluene	1.000 ppm	-No-	129.6 sec
8	ethylbenzene	1.000 ppm	-No-	257.0 sec
9	m,p-xylene	2.000 ppm	-No-	275.7 sec
10	o-xylene	1.000 ppm	-No-	324.8 sec

- Detected 10 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #3 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 17,95 10:06
SAMPLE TIME: AUG 17,95 09:59

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	32	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	8.832	MVS	19.8
2	UNKNOWN	23.33	MVS	21.8
3	UNKNOWN	7.700	MVS	28.6
4	UNKNOWN	19.04	MVS	31.5
5	UNKNOWN	0.063	MVS	43.0
6	BENZENE	5.341	PPM	71.7
7	UNKNOWN	4.063	MVS	110.1
8	TOLUENE	7.086	PPM	130.8
9	UNKNOWN	7.302	MVS	181.0
10	UNKNOWN	3.479	MVS	224.2
11	ETHYLBENZENE	7.513	PPM	258.4
12	M,P-XYLENE	17.30	PPM	277.0
13	O-XYLENE	10.42	PPM	324.5

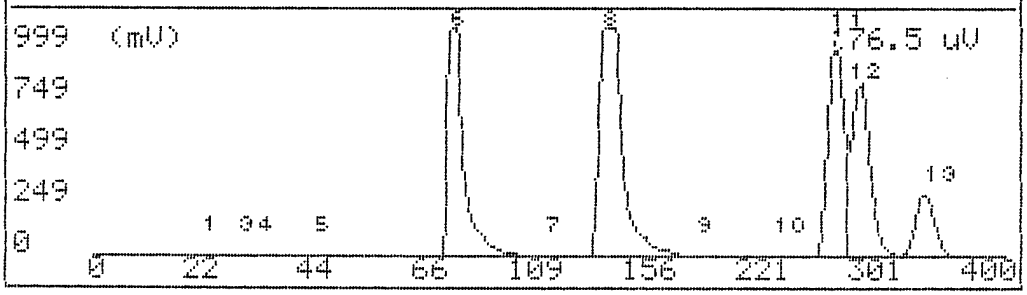
NOTES

JOE BYRD, JR,
MINNEAPOLIS ANGB
10 PPM BTEX

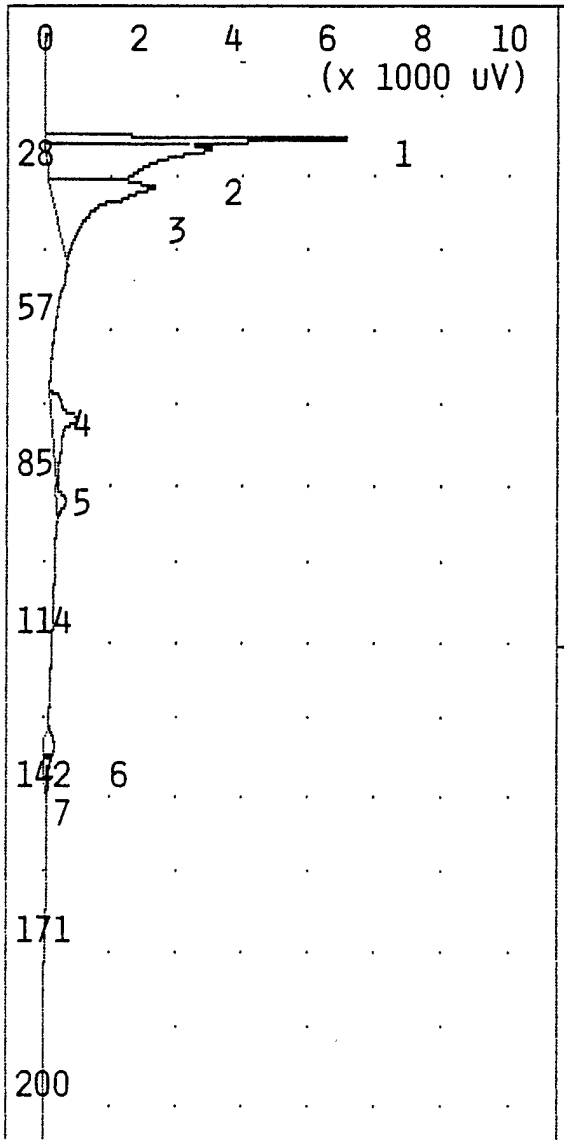
G.C. Ready 10S+ GC Function Aug 17,95 10:12
-- Analysis No 3 -- Run at - Aug 17,95 09:59 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
5	Unknown	0.063 mVS	-No-	43.0 sec
6	benzene	10.00 ppm	-No-	71.7 sec
7	Unknown	4.063 mVS	-No-	110.1 sec
8	toluene	10.00 ppm	-No-	130.8 sec
9	Unknown	7.302 mVS	-No-	181.0 sec
10	Unknown	3.479 mVS	-No-	224.2 sec
11	ethylbenzene	10.00 ppm	-No-	258.4 sec
12	m,p-xylene	20.00 ppm	-No-	277.0 sec
13	o-xylene	10.00 ppm	-No-	324.5 sec

- Detected 13 peaks. Use ↑ ↓ to scroll [405 sec]



ANALYSIS #5 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 17,95 10:31
SAMPLE TIME: AUG 17,95 10:24

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	33	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

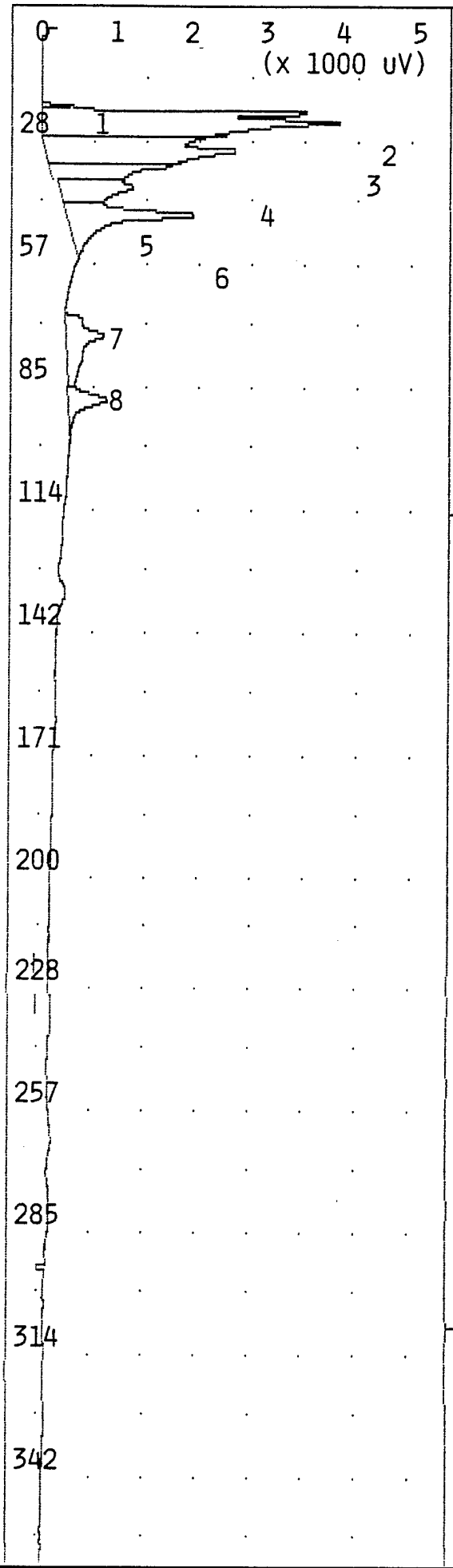
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	9.175 MVS	19.9
2	UNKNOWN	16.39 MVS	21.8
3	UNKNOWN	12.81 MVS	28.8
4	BENZENE	2.942 PPB	71.6
5	UNKNOWN	0.740 MVS	86.9
6	TOLUENE	1.398 PPB	131.7
7	UNKNOWN	1.098 MVS	133.6
8	ETHYLBENZENE	1.307 PPB	258.4

NOTES

JOE BYRD, JR,
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #6 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 17,95 10:41
SAMPLE TIME: AUG 17,95 10:34

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

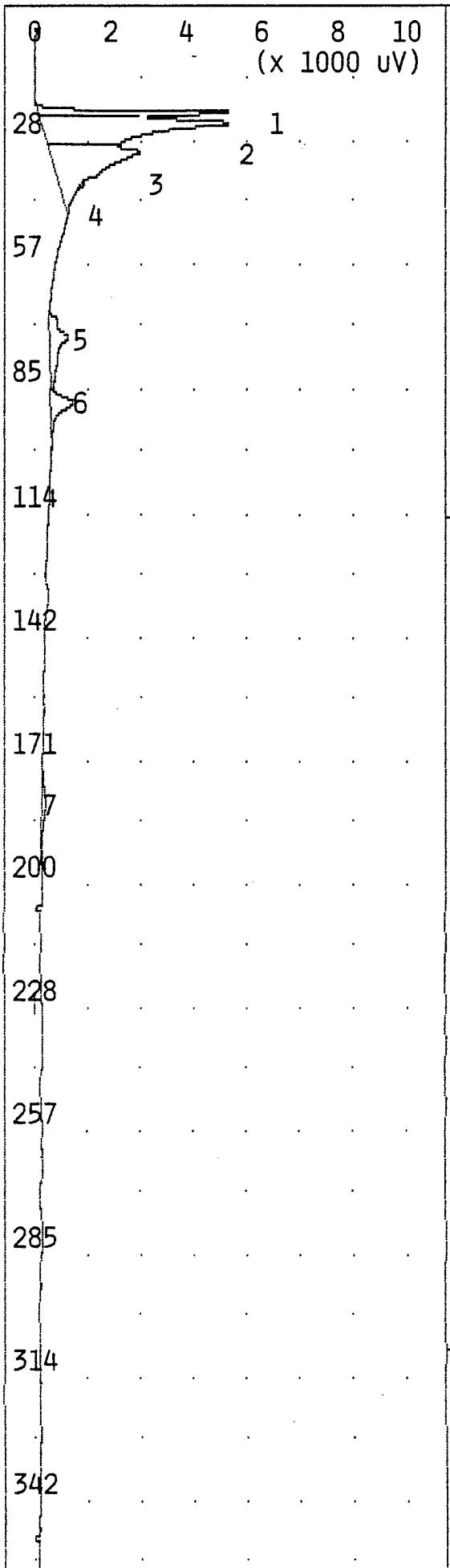
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	0.434 MVS	18.6
2	UNKNOWN	5.910 MVS	20.0
3	UNKNOWN	17.58 MVS	22.2
4	UNKNOWN	14.16 MVS	29.0
5	UNKNOWN	4.145 MVS	37.7
6	UNKNOWN	6.790 MVS	43.6
7	BENZENE	3.089 PPB	71.8
8	UNKNOWN	2.231 MVS	86.9

NOTES

JOE BYRD, JR,
MINNEAPOLIS ANGB
591-001MW WATER 10 ml
gB

ANALYSIS #7 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 17,95 10:51
SAMPLE TIME: AUG 17,95 10:44

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

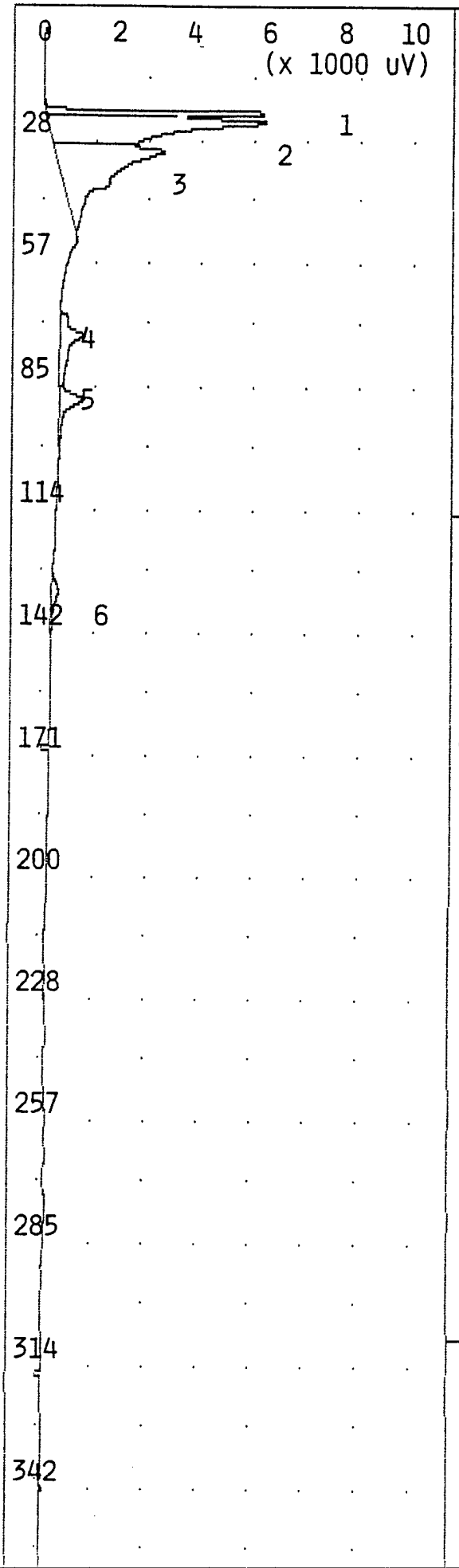
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	7.774 MVS	20.0
2	UNKNOWN	21.20 MVS	22.8
3	UNKNOWN	16.03 MVS	29.0
4	UNKNOWN	0.135 MVS	36.4
5	BENZENE	2.952 PPB	72.0
6	UNKNOWN	2.593 MVS	86.9
7	UNKNOWN	0.699 MVS	179.4

NOTES

JOE BYRD, JR,
MINNEAPOLIS ANGB
801-001MW WATER 10ML

ANALYSIS #8 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 17,95 11:01
SAMPLE TIME: AUG 17,95 10:54

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

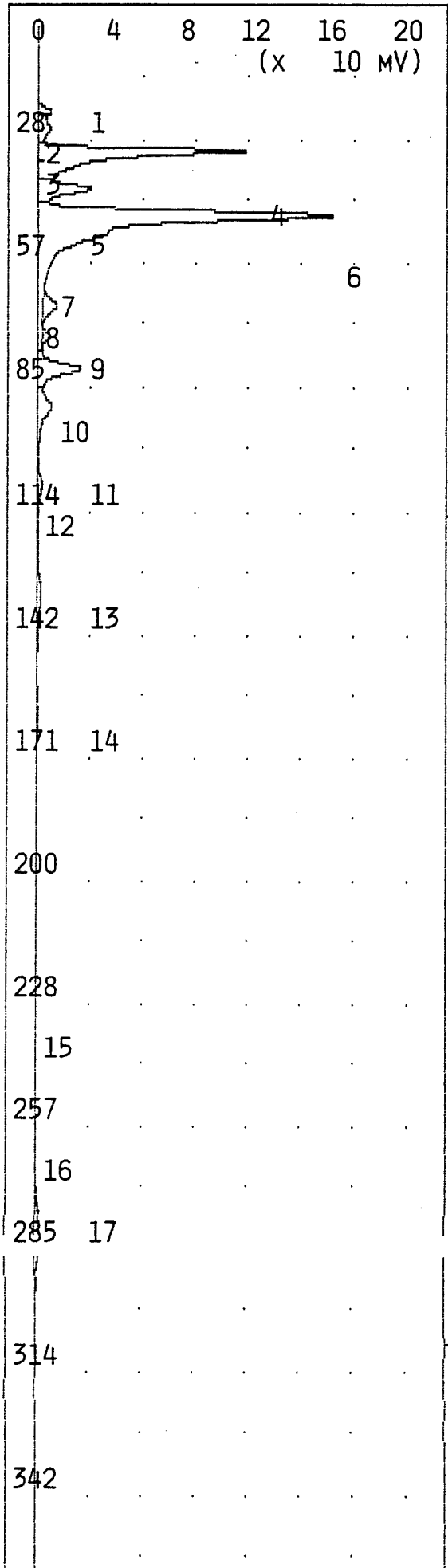
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	9.226 MVS	20.1
2	UNKNOWN	24.84 MVS	22.3
3	UNKNOWN	23.23 MVS	29.0
4	BENZENE	3.157 PPB	72.1
5	UNKNOWN	2.435 MVS	87.0
6	TOLUENE	1.095 PPB	131.6

NOTES

JOE BYRD, JR,
MINNEAPOLIS ANGB
873-001MW WATER ~~1ML~~ 10ml

ANALYSIS #9 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 17,95 11:11
SAMPLE TIME: AUG 17,95 11:04

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	34	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

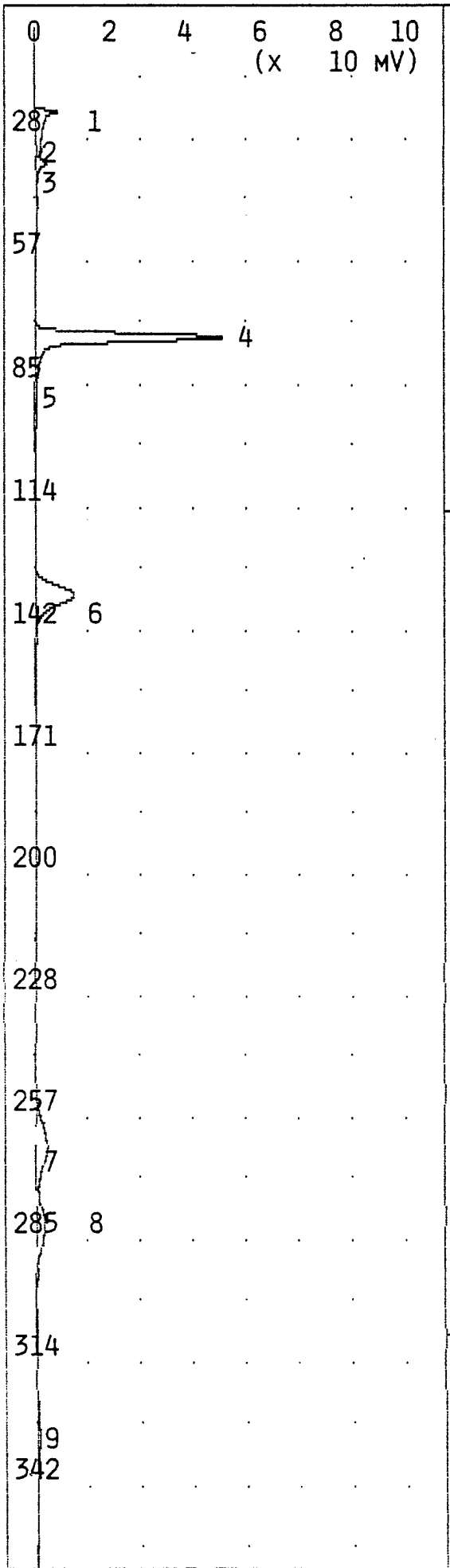
PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	15.53	MVS	20.2
2	UNKNOWN	7.212	MVS	22.2
3	UNKNOWN	23.21	MVS	24.0
4	UNKNOWN	314.9	MVS	29.3
5	UNKNOWN	84.72	MVS	37.8
6	UNKNOWN	742.7	MVS	44.2
7	UNKNOWN	25.41	MVS	65.2
8	BENZENE	6.183	PPB	72.1
9	UNKNOWN	83.59	MVS	79.4
10	UNKNOWN	49.98	MVS	88.4
11	UNKNOWN	15.70	MVS	106.1
12	UNKNOWN	7.807	MVS	114.6
13	TOLUENE	28.15	PPB	131.0
14	UNKNOWN	2.838	MVS	161.8
15	UNKNOWN	0.784	MVS	231.6
16	ETHYLBENZENE	1.730	PPB	260.0
17	M,P-XYLENE	187.1	PPB	280.2

LH

NOTES

JOE BYRD, JR,
MINNEAPOLIS ANGB
651-002MW WATER ~~1ML~~
10ml

ANALYSIS #10 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 17,95 12:43
SAMPLE TIME: AUG 17,95 12:36

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	27.36 MVS	20.4
2	UNKNOWN	0.467 MVS	29.4
3	UNKNOWN	9.046 MVS	32.4
4	BENZENE	96.43 PPB	72.8
5	UNKNOWN	0.449 MVS	87.4
6	TOLUENE	74.35 PPB	132.6
7	ETHYLBENZENE	74.09 PPB	261.3
8	M,P-XYLENE	154.8 PPB	280.2
9	O-XYLENE	83.67 PPB	330.4

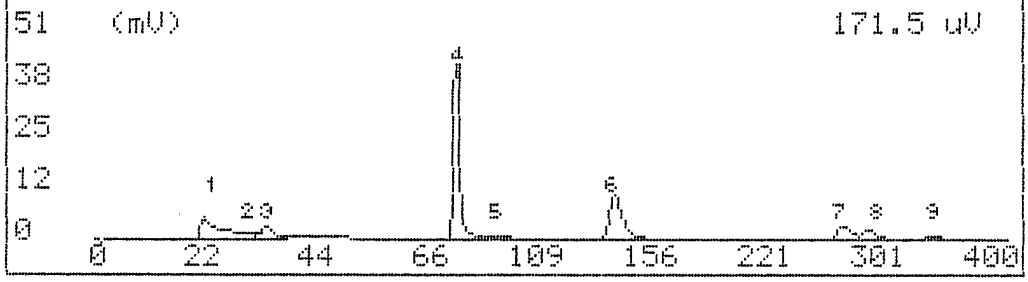
NOTES

JOE BYRD, JR,
MINNEAPOLIS ANGB
100 PPB BTEX

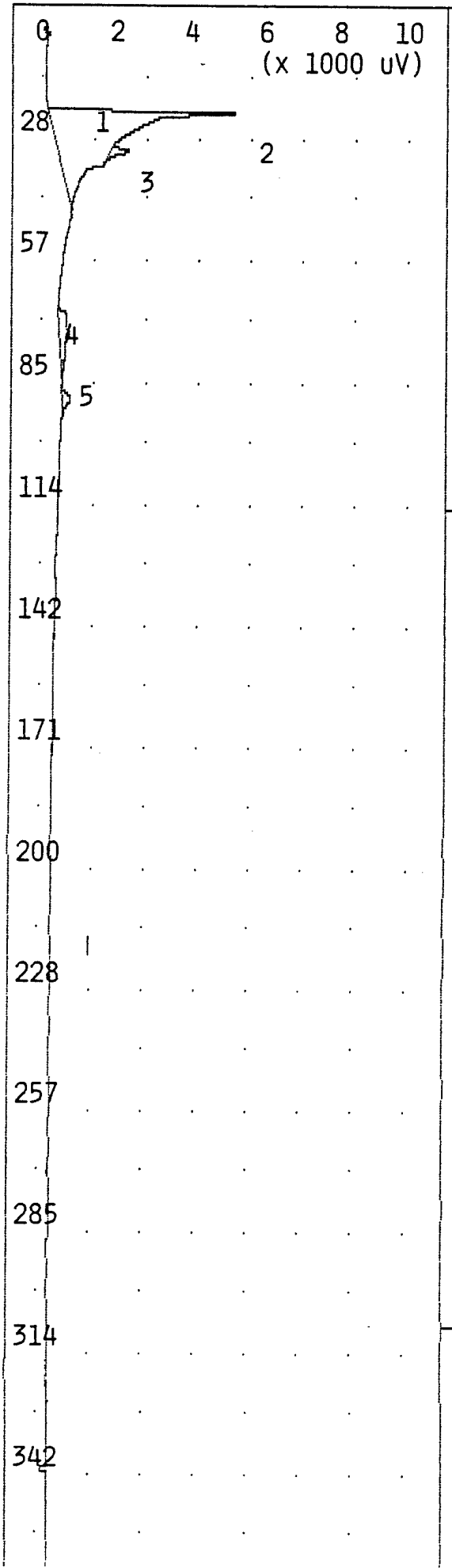
G.C. Ready 10S+ GC Function Aug 17,95 12:47
-- Analysis No 10 -- Run at - Aug 17,95 12:36 -

Pk No	Name	Conc/Area	Alarm	Ret.Time
1	Unknown	27.36 mVS	-No-	20.4 sec
2	Unknown	0.467 mVS	-No-	29.4 sec
3	Unknown	9.046 mVS	-No-	32.4 sec
4	benzene	100.0 ppb	-No-	72.8 sec
5	Unknown	0.449 mVS	-No-	87.4 sec
6	toluene	100.0 ppb	-No-	132.6 sec
7	ethylbenzene	99.99 ppb	-No-	261.2 sec
8	m,p-xylene	199.9 ppb	-No-	280.2 sec
9	o-xylene	99.72 ppb	-No-	330.4 sec

- Detected 9 peaks. [405 sec]



ANALYSIS #11 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 17,95 12:55
SAMPLE TIME: AUG 17,95 12:48

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

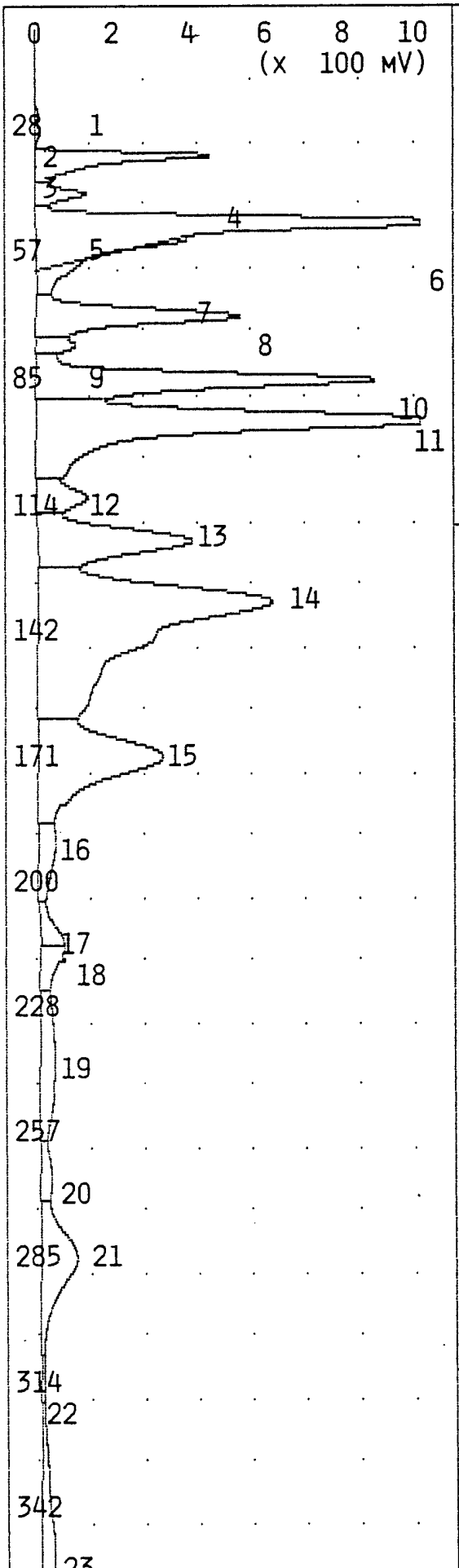
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	0.020 MVS	18.1
2	UNKNOWN	31.74 MVS	20.5
3	UNKNOWN	0.792 MVS	29.4
4	BENZENE	2.202 PPB	72.5
5	UNKNOWN	0.830 MVS	87.7

NOTES

JOE BYRD, JR,
MINNEAPOLIS ANGB
AIR BLANK

ANALYSIS #12 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 17,95 13:05
SAMPLE TIME: AUG 17,95 12:58

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	35	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

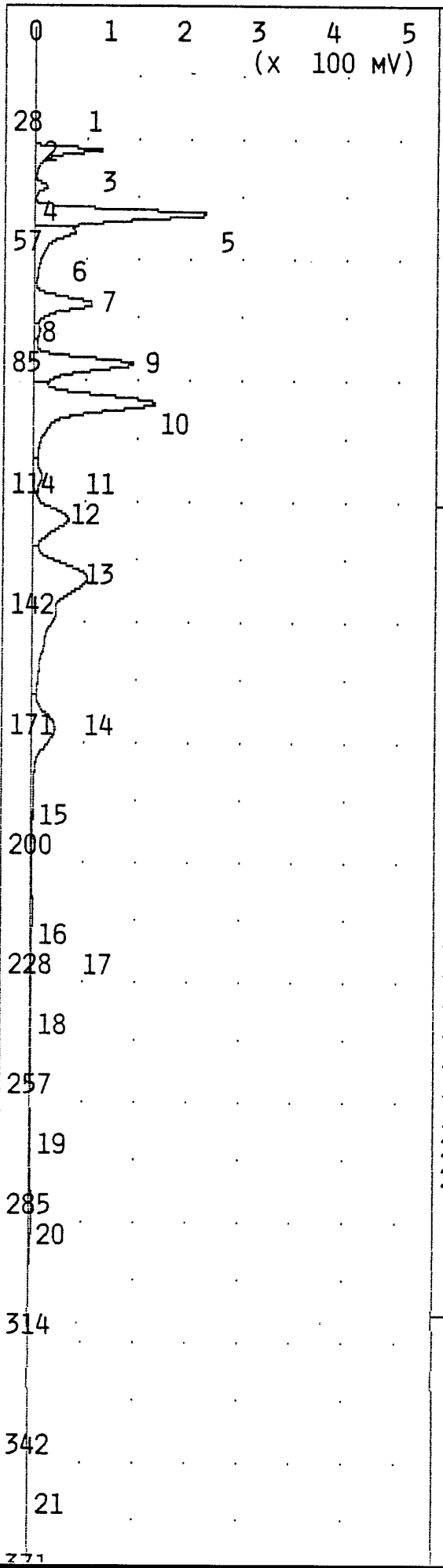
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	25.60	MVS	20.2
2	UNKNOWN	7.524	MVS	22.5
3	UNKNOWN	42.17	MVS	24.2
4	UNKNOWN	1.444	VSEC	29.7
5	UNKNOWN	416.4	MVS	38.3
6	UNKNOWN	6.967	VSEC	45.0
7	UNKNOWN	99.59	MVS	48.9
8	UNKNOWN	2.410	VSEC	66.2
9	BENZENE	183.9	PPB	72.6
10	UNKNOWN	3.960	VSEC	80.2
11	UNKNOWN	7.184	VSEC	89.4
12	UNKNOWN	772.4	MVS	106.8
13	UNKNOWN	2.970	VSEC	116.5
14	TOLUENE	5.907	PPM	130.5
15	UNKNOWN	3.961	VSEC	165.6
16	UNKNOWN	606.3	MVS	185.4
17	UNKNOWN	387.6	MVS	209.0
18	UNKNOWN	464.7	MVS	212.0
19	UNKNOWN	1.094	VSEC	234.8
20	ETHYLBENZENE	257.7	PPB	261.8
21	M,P-XYLENE	2.254	PPM	279.7
22	UNKNOWN	63.41	MVS	310.4
23	O-XYLENE	2.619	PPM	347.6

NOTES

JOE BYRD, JR,
MINNEAPOLIS ANGB
MW-4 BAR ENGINEERING
WATER 10ML

ANALYSIS #13 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 17,95 13:19
SAMPLE TIME: AUG 17,95 13:12

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

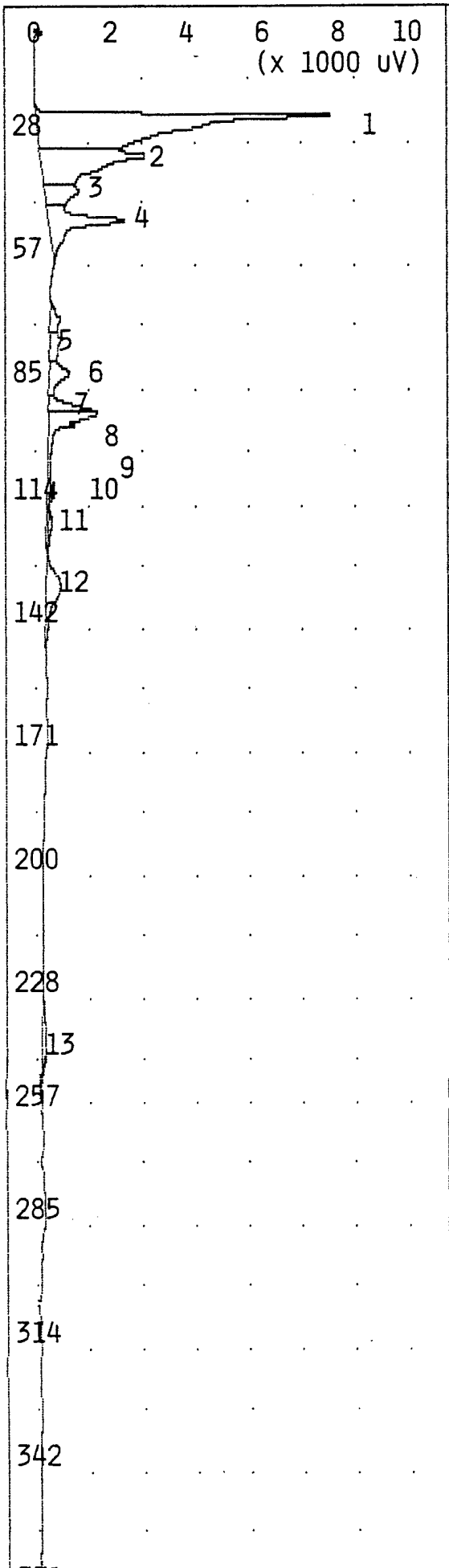
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC		R.T.
1	UNKNOWN	0.534	MVS	18.3
2	UNKNOWN	5.093	MVS	23.6
3	UNKNOWN	208.7	MVS	29.3
4	UNKNOWN	45.13	MVS	38.0
5	UNKNOWN	748.7	MVS	44.5
6	UNKNOWN	263.7	MVS	48.8
7	UNKNOWN	322.5	MVS	66.0
8	BENZENE	20.65	PPB	72.5
9	UNKNOWN	546.3	MVS	80.0
10	UNKNOWN	903.6	MVS	89.2
11	UNKNOWN	72.45	MVS	106.8
12	UNKNOWN	323.5	MVS	116.6
13	TOLUENE	521.2	PPB	130.6
14	UNKNOWN	382.6	MVS	166.4
15	UNKNOWN	2.893	MVS	185.8
16	UNKNOWN	54.16	MVS	209.8
17	UNKNOWN	2.895	MVS	221.8
18	UNKNOWN	63.16	MVS	236.0
19	ETHYLBENZENE	51.09	PPB	262.6
20	M,P-XYLENE	256.9	PPB	281.6
21	O-XYLENE	154.3	PPB	349.3

NOTES

JOE BYRD, JR,
MINNEAPOLIS ANGB
MW-4 BAR ENGINEERING
WATER 10ML
10 MICROLITER INJECTION

ANALYSIS #14 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 17,95 13:42
SAMPLE TIME: AUG 17,95 13:35

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

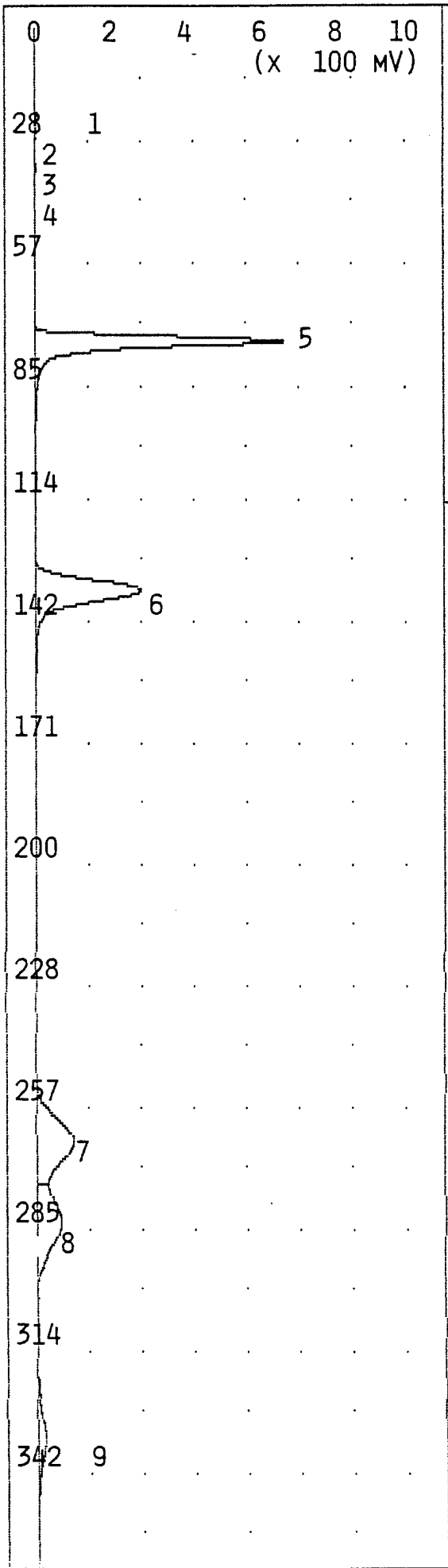
PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	34.57 MVS	20.5
2	UNKNOWN	13.86 MVS	29.6
3	UNKNOWN	3.574 MVS	37.7
4	UNKNOWN	7.451 MVS	44.7
5	UNKNOWN	1.217 MVS	67.3
6	BENZENE	1.015 PPB	72.9
7	UNKNOWN	2.155 MVS	80.0
8	UNKNOWN	2.297 MVS	88.9
9	UNKNOWN	4.846 MVS	92.0
10	UNKNOWN	0.122 MVS	106.6
11	UNKNOWN	0.361 MVS	116.1
12	TOLUENE	5.275 PPB	130.8
13	ETHYLBENZENE	2.984 PPB	237.6

NOTES

JOE BYRD, JR,
MINNEAPOLIS ANGB
651-001MWA
WATER 10ML

ANALYSIS #15 10S+ GC FUNCTION ANALYSIS REPORT



TIME PRINTED: AUG 17,95 13:54
SAMPLE TIME: AUG 17,95 13:47

METHOD

SLOPE UP	0.500	MV/SEC
SLOPE DOWN	1.500	MV/SEC
MIN AREA	0.000	MVSEC
MIN HEIGHT	0.000	MV
ANALYSIS DELAY	0.0	SEC
WINDOW PERCENT	10.0	%
DET FLOW	14	ML/MIN
B/F FLOW	14	ML/MIN
AUX FLOW	0	ML/MIN
OVEN TEMP	40	C
AMB TEMP	36	C
MAX GAIN	1000	
ANALYSIS TIME	400.0	SEC

PEAK REPORT

PK	COMPOUND NAME	AREA/CONC	R.T.
1	UNKNOWN	10.81 MVS	20.5
2	UNKNOWN	21.28 MVS	22.4
3	UNKNOWN	5.828 MVS	29.5
4	UNKNOWN	15.25 MVS	32.7
5	BENZENE	960.0 PPB	73.4
6	TOLUENE	864.8 PPB	133.6
7	ETHYLBENZENE	764.0 PPB	263.2
8	M,P-XYLENE	1.467 PPM	282.1
9	O-XYLENE	763.2 PPB	332.0

NOTES

JOE BYRD, JR,
MINNEAPOLIS ANGB
1 PPM BTEX

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APPENDIX D

AQUIFER SLUG TEST DATA ANALYSIS

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D.1 INTRODUCTION

Aquifer slug tests were performed on three monitoring wells to investigate the hydraulic properties of the unconsolidated glacial deposits and on four monitoring wells to investigate the hydraulic properties of the Platteville Limestone. A detailed description of the data collection and analysis is presented in the following sections.

The slug test method is used to obtain data necessary to calculate the hydraulic conductivity of the subsurface material around the screened portion of a well. The technique is based on measurements of the water level as a function of time after withdrawing a slug of known volume from the monitoring well.

D.2 AQUIFER SLUG TEST PROCEDURE

The equipment used for slug testing included a Hermit Environmental Data Logger model 1000C manufactured by *In-Situ*, Inc., of Laramie, Wyoming. Also used was a pressure transducer model PTX-161, manufactured by *In-Situ*, Inc. An acrylic slug was used to produce the initial water displacement. The acrylic slug was decontaminated by procedures stated in the Work Plan for sampling equipment prior to lower it in the monitoring well.

Prior to testing, the well was developed and the water level allowed to stabilize. The slug was decontaminated using standard procedures prior to performing the slug test.

Immediately upon opening the monitoring well, the headspace of the well to be slug tested was tested for volatile organic vapors and lower explosive limit and oxygen percentages using a photoionization detector and explosimeter respectively. Next, the initial water level was measured and recorded in the field logbook and the pressure transducer was placed in the well and allowed to equilibrate. The proper operating parameters such as time, date, test number, sample rate, number of inputs, data type, and scale factor and offset values of the transducer were inserted to properly program the data logger for the slug test. The decontaminated slug was rapidly lowered into the well in such a manner as to minimize turbulence and splashing. The injection of the slug created a nearly instantaneous rise in the water level or hydraulic head as well as some transient oscillations (minimized by the smooth slug injection). After the initial rise, the water level of the well dropped as it returned to equilibrium.

After equilibrium was attained, the slug was rapidly and smoothly removed from the well and the subsequent rise of the water level in the well versus the time since the start of the test was recorded by the data logger.

After the slug test was completed, the data was downloaded onto a computer and printed out by a portable printer.

D.3 SLUG TEST DATA ANALYSIS METHODS

The Bouwer and Rice (1976) method was used for reduction of the slug test data obtained from monitoring wells set in unconfined and confined conditions to determine values of hydraulic conductivity. The data plots and data reduction for this method as discussed in the previous paragraph were accomplished using the AQTESOLV software package Version 2.0 developed by Geraghty & Miller (1994). The slug test results are presented in Section D.4.

The method described by Bouwer and Rice (1976) is used to calculate the hydraulic conductivity of an aquifer or hydrologic unit in the vicinity of a well screen from the rate of rise or fall of the water level or hydraulic head in the monitoring well after a known volume or "slug" is suddenly injected or withdrawn. This particular method is based on the following assumptions: (1) drawdown of the water table around the well is negligible, (2) flow above the water table (in the capillary fringe) can be ignored, (3) head losses as water enters the well (well losses) are negligible, and (4) the aquifer is homogeneous and isotropic.

The rate of flow of groundwater into a well after the water level has been lowered a distance, y, below the static water table around the well is calculated using the Thiem equation (Equation 1).

$$Q = 2\pi KL \frac{y}{\ln(R_e/r_w)}, \text{ where} \qquad (1)$$

Where:

Q = rate of flow into the well;

π = 3.14159, the ratio of the circumference to the diameter of a circle.

K = hydraulic conductivity of the hydrologic unit in the vicinity of the well screen;

L = length of screened interval;

y = vertical difference between water level inside the well and the static water level outside the well;

R_e = effective radial distance over which y is dissipated; and

r_w = radial distance to the undisturbed portion of the hydrologic unit from the centerline of the well.

The value of r_w is the radius of the screened section of the well plus the thickness of the sand pack and the developed zone around the well. Because the take only the thickness of the sand pack into account (Bouwer, 1989).

The rate of rise of the water level (dy/dt) in the well after the water level has been quickly lowered can be regarded as:

$$\frac{dy}{dt} = \frac{-Q}{\pi r_c 2} \qquad (2)$$

dy/dt = rate of rise of the water level within the well;
Q = volume rate of flow into well;
π = 3.14159, the ratio of the circumference to the diameter of a circle; and
r_c = radius of the casing.

If the water level rises in the screened section of the well with a sand pack around it, then the thickness and porosity of the sand pack should be taken into account when calculating the equivalent value of r_c for the rising water level. The equivalent value of r_c is then calculated using Equation (3) if the water level is within the screened interval of the well.

$$r_c = [(1 - n)r_c^2]^{1/2}, \text{ where} \qquad (3)$$

n = porosity of the sand pack;
r_c = radius of the casing;
r_w = radius distance to the undisturbed portion of the aquifer from the centerline of the well.

By solving Equation (2) for Q, and using it in Equation (1), it is possible to integrate, and solve for hydraulic conductivity, K, in Equation (4).

$$K = r_c^2 \ln\frac{(R_e/r_w)}{2L} \frac{1}{t} \ln \frac{y_o}{y_t}, \text{ where} \qquad (4)$$

K = Hydraulic conductivity;

r_c = radius of casing;

R_e = effective radial distance over which y is dissipated;

r_w = radial distance to the undisturbed portion of the aquifer from the centerline of the well;

y_o = y at time zero; and

y_t = y at time t.

This equation was used to calculate hydraulic conductivity values.

Values of R_e, effective radius, for various system geometries are expressed in terms of the dimensionless ratio $\ln(R_e/r_w)$ and were determined empirically with an electrical resistance network analog for different values of r_w, L, length of water column in the well, H, and hydrologic unit thickness, b, (Bouwer and Rice, 1976). The data are used in one of two equations: Equation (5) is used when H is less than b, and Equation (6) when H is equal to b. These equations are:

$$\ln \frac{R_e}{r_w} = \left[\frac{1.1}{\ln(H/r_w)} + \frac{A + B\ln[(b - H)/r_w]}{L/r_w} \right]^{-1}, \text{ and} \qquad (5)$$

$$\ln \frac{R_e}{r_w} = \left[\frac{1.1}{\ln(H/r_w)} + \frac{C}{L/r_w} \right]^{-1}, \textit{ where} \qquad (6)$$

A, B, and C = dimensionless values as a function of L/r_w;

R_e = Effective radial distance over which y is dissipated;

r_w = Radial distance to the undisturbed portion of the aquifer from the center line of the well;

H = length of water column in the well;

b = hydrologic unit thickness; and

L = length of screened interval.

Because y and t are the only variables in Equation (4), a plot of ln y_t versus t semilogarithmic paper may be used to determine $[\ln(y_o/y_t)]/t$. The straight line through the data points can also be used to select two values of y, namely y_o and y_t, along the time interval t for substitution into Equation (4). Because drawdown of the groundwater table around the well increases exponentially and time increases linearly as the test progresses, the points begin to deviate from the straight line for large t and small y. Thus, only the linear portion of the curve should be used to evaluate $[\ln(y_o/y_t)]/t$ for the calculation of K using Equation (4) (Bouwer, 1989).

D.4 SLUG TEST RESULTS

The graphs illustrating the plotted displacement values versus time are presented in this section. The computed hydraulic conductivity values for the monitoring wells at UST – Sites No. 1, No. 2, No. 3, and No. 4 are presented in Table D.1.

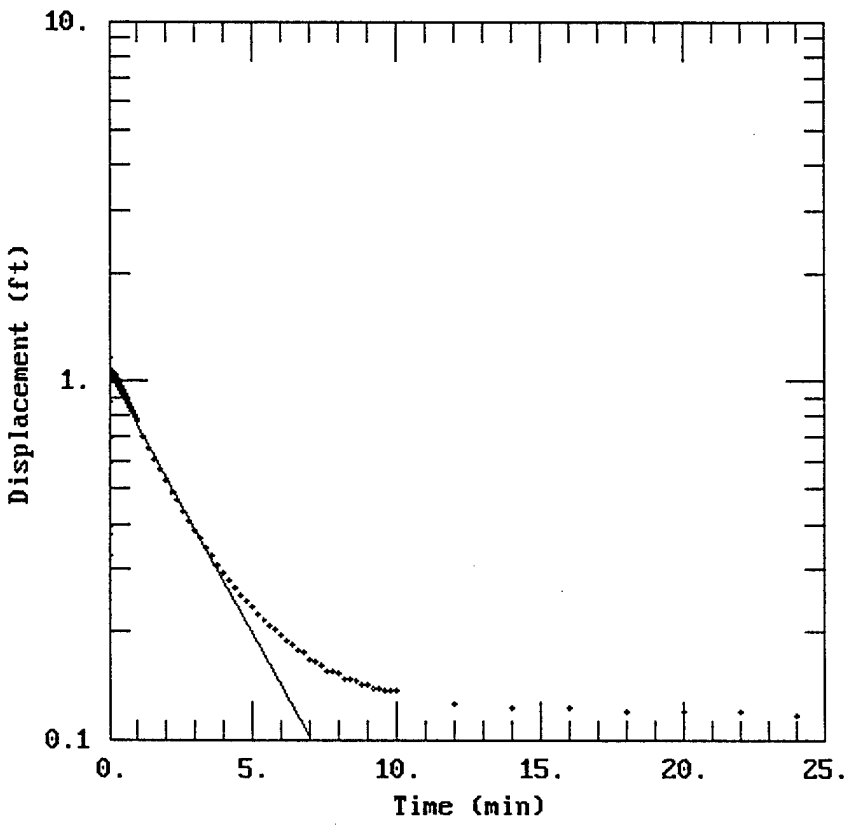
Table D.1
Slug Test Results, UST – Sites No. 1, No. 2, No. 3, and No. 4
133rd AW, Minnesota ANGB, Minneapolis, Minnesota

Monitor Well	Hydraulic Conductivity (ft/min)
UST – Site No. 1	
591-001MW	7.68×10^{-3}
UST – Site No. 2	
873-001MW	1.54×10^{-1}
UST – Site No. 3	
801-001MW	6.56×10^{-2}
UST – Site No. 4	
651-001MWA	5.32×10^{-2}
651-001MWB	2.926×10^{-2}
651-002MW	9.38×10^{-2}
MW-4	4.83×10^{-3}

ft/min – feet per minute.
MW – Monitoring Well.
UST – Underground Storage Tank.

CLIENT: HQ ANG/CEVR	COMPANY: Operational Technologies Corp.
LOCATION: Minneapolis ANGB	PROJECT: 1315-193

591-001MW



DATA SET:
591-001.DAT
01/17/96

AQUIFER MODEL:
Confined

SOLUTION METHOD:
Bouwer-Rice

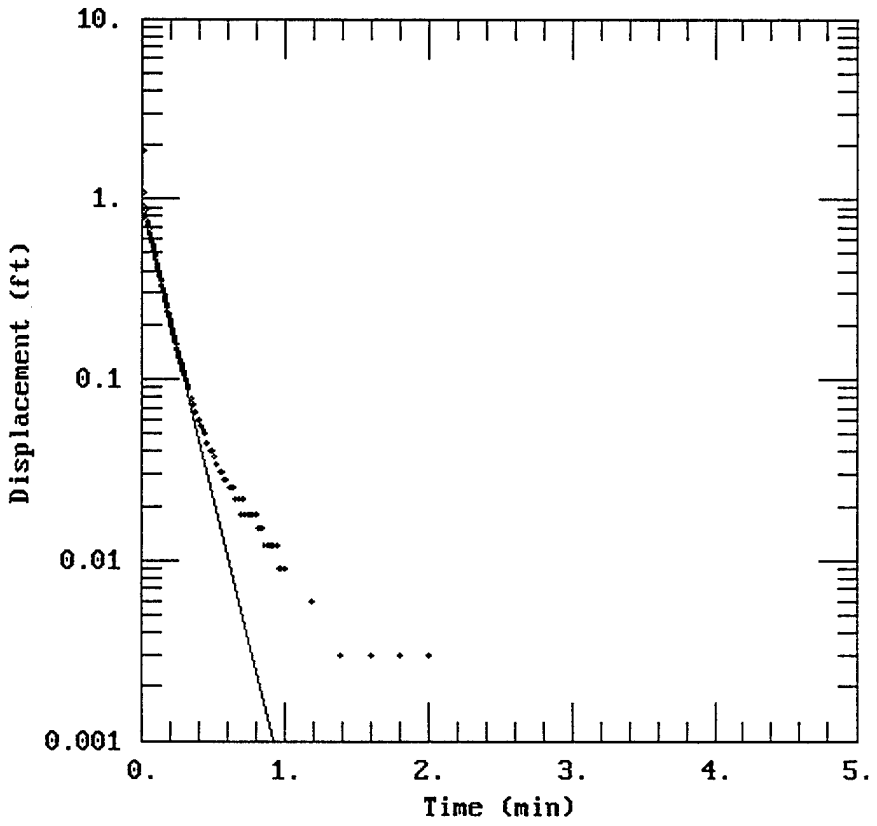
TEST DATA:
H0= 1.079 ft
r_c= 0.174 ft
r_w= 0.174 ft
L = 2. ft
b = 19.7 ft
H = 13.65 ft

PARAMETER ESTIMATES:
K = 0.007682 ft/min
y0 = 1.037 ft

AQTESOLV

CLIENT: HQ ANG/CEVR	COMPANY: Operational Technologies Corp.
LOCATION: Minneapolis ANGB	PROJECT: 1315-193

873-001MW



DATA SET:
873-001.DAT
01/17/96

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

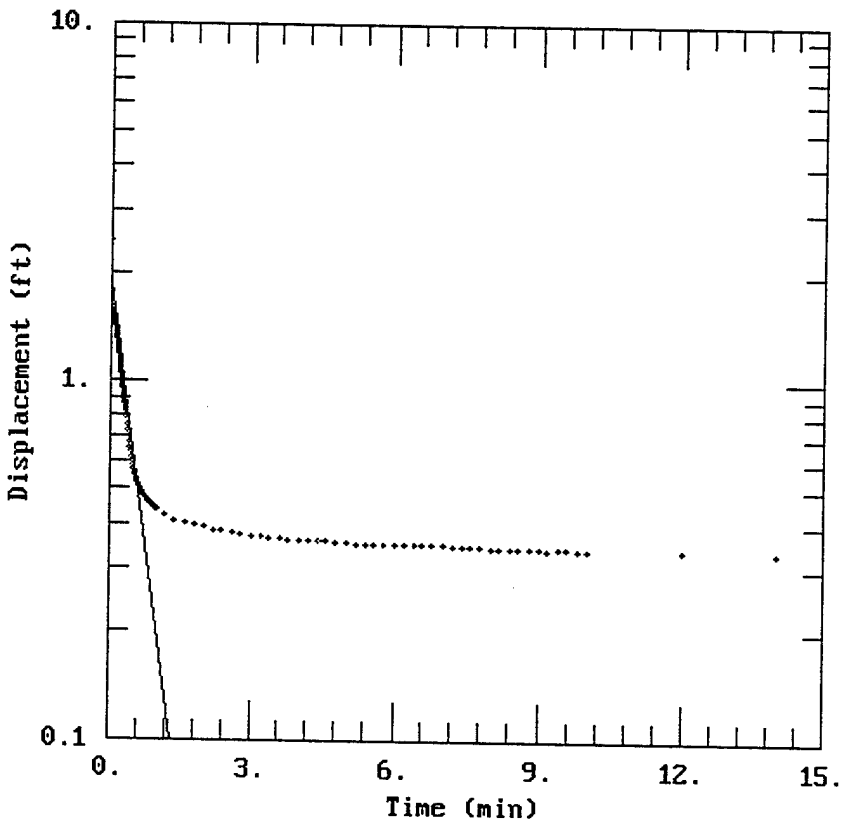
TEST DATA:
H0= 1.864 ft
r_c= 0.0833 ft
r_w= 0.854 ft
L = 4.46 ft
b = 4.46 ft
H = 3.15 ft

PARAMETER ESTIMATES:
K = 0.1535 ft/min
y0 = 0.8997 ft

AQTESOL

CLIENT: HQ ANG/CEVR	COMPANY: Operational Technologies Corp.
LOCATION: Minneapolis ANGB	PROJECT: 1315-193

801-001MW



DATA SET:
801-001.DAT
01/17/96

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

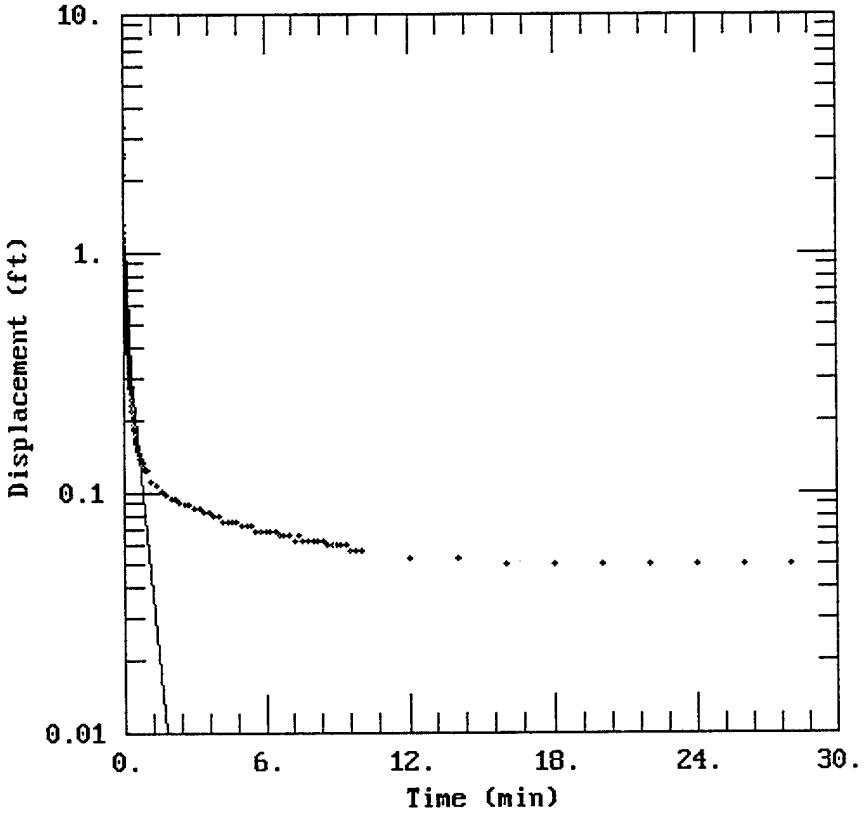
TEST DATA:
H0= 3.826 ft
r_c= 0.0833 ft
r_w= 0.854 ft
L = 4.46 ft
b = 4.46 ft
H = 4.46 ft

PARAMETER ESTIMATES:
K = 0.06555 ft/min
y0 = 1.87 ft

AQTESOLV

CLIENT: HQ ANG/CEVR	COMPANY: Operational Technologies Corp.
LOCATION: Minneapolis ANGB	PROJECT: 1315-193

651-001MWA



DATA SET:
651-001A.DAT
01/17/96

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

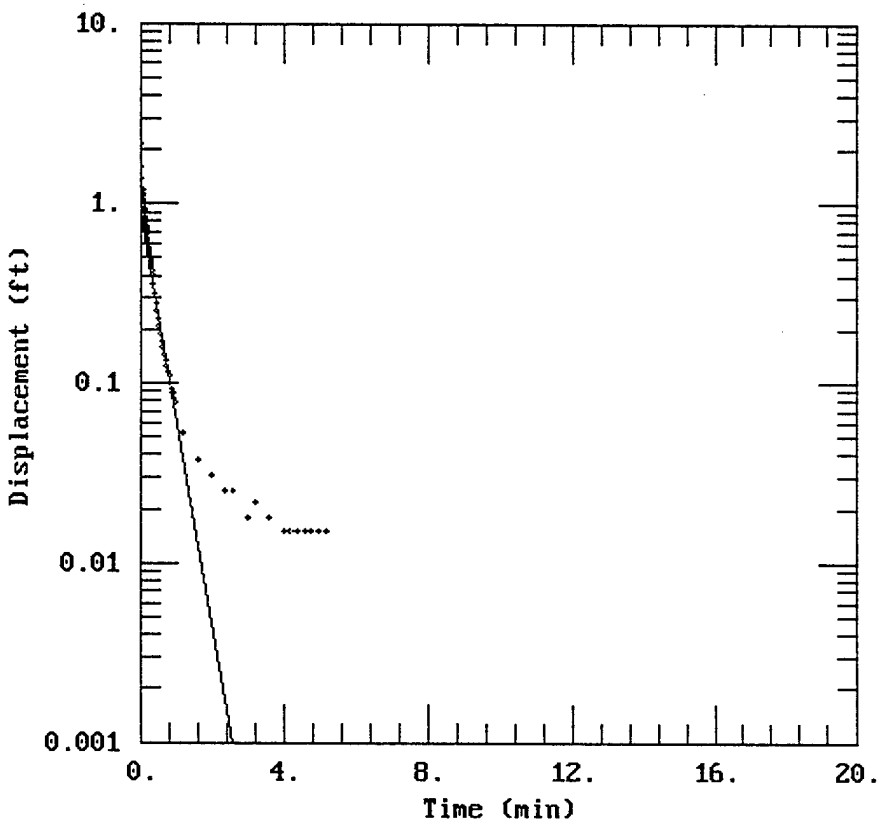
TEST DATA:
H0= 3.353 ft
r_c= 0.0833 ft
r_w= 0.854 ft
L = 7.4 ft
b = 7.4 ft
H = 7.3 ft

PARAMETER ESTIMATES:
K = 0.05317 ft/min
y0 = 0.6575 ft

AQTESOL

CLIENT: HQ ANG/CEVR	COMPANY: Operational Technologies Corp.
LOCATION: Minneapolis ANGB	PROJECT: 1315-193

651-001MWB



DATA SET:
651-001B.DAT
01/17/96

AQUIFER MODEL:
Confined

SOLUTION METHOD:
Bouwer-Rice

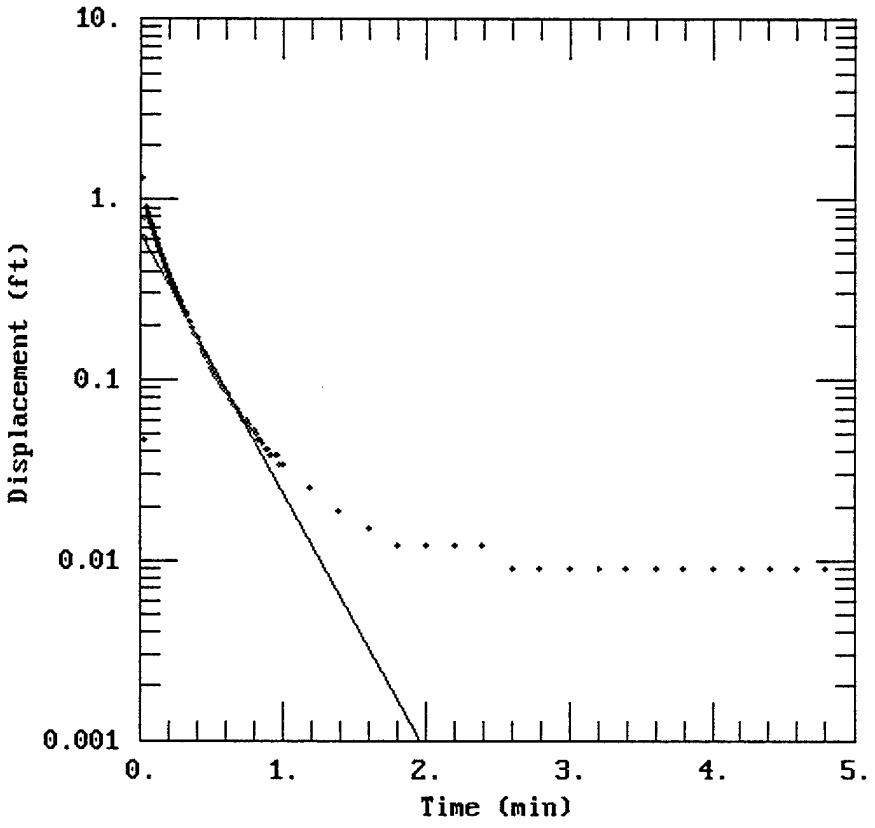
TEST DATA:
H0= 2.132 ft
r_c= 0.0833 ft
r_w= 0.161 ft
L = 5. ft
b = 26.7 ft
H = 7.92 ft

PARAMETER ESTIMATES:
K = 0.01086 ft/min
y0 = 0.8541 ft

AQTESOLV

CLIENT: HQ ANG/CEVR	COMPANY: Operational Technologies Corp.
LOCATION: Minneapolis ANGB	PROJECT: 1315-193

651-002MW



DATA SET:
651-002.DAT
01/17/96

AQUIFER MODEL:
Confined

SOLUTION METHOD:
Bouwer-Rice

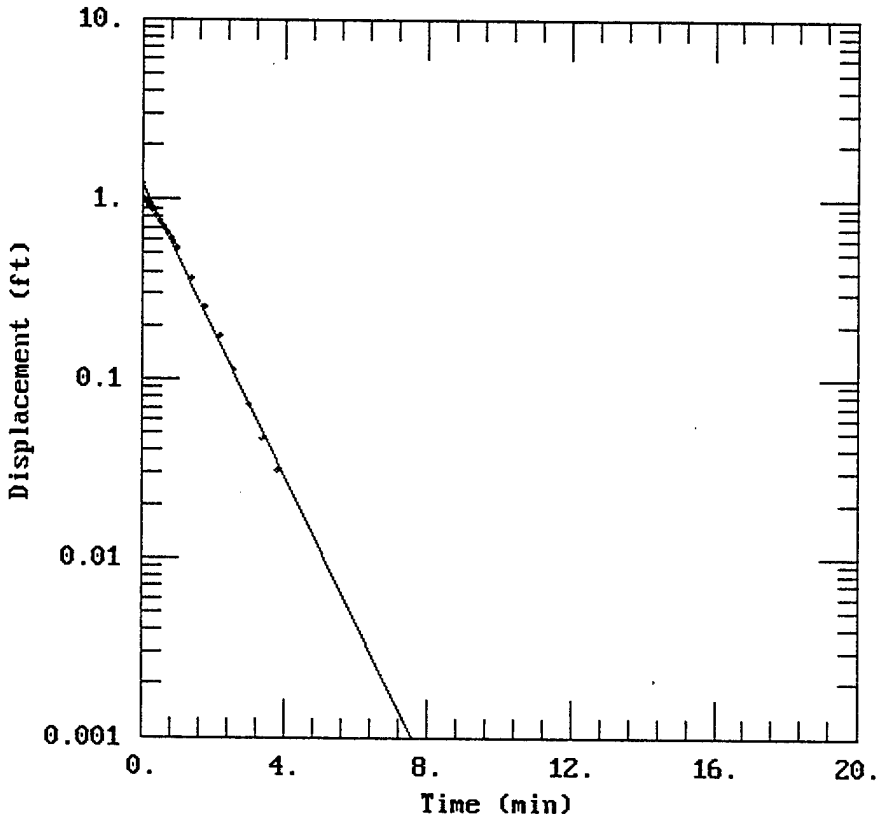
TEST DATA:
H0= 1.312 ft
r_c= 0.189 ft
r_w= 0.189 ft
L = 1.8 ft
b = 22. ft
H = 13.99 ft

PARAMETER ESTIMATES:
K = 0.09378 ft/min
y0 = 0.6426 ft

AQTESOLV

CLIENT: HQ ANG/CEVR	COMPANY: Operational Technologies Corp.
LOCATION: Minneapolis ANGB	PROJECT: 1315-193

MW-4



DATA SET:
MW-4.DAT
01/17/96

AQUIFER MODEL:
Confined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 1.239 ft
r_c= 0.169 ft
r_w= 0.169 ft
L = 10.5 ft
b = 30. ft
H = 13.13 ft

PARAMETER ESTIMATES:
K = 0.004829 ft/min
y0 = 1.232 ft

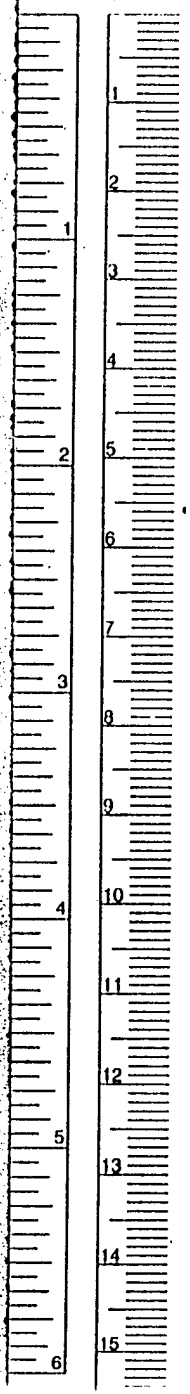
AQTESOLV

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APPENDIX E

FIELD NOTEBOOKS

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MEASUREMENT CONVERSIONS

IF YOU KNOW	MULTIPLY BY	TO FIND
LENGTH		
inches	2.540	centimeters
feet	30.480	centimeters
yards	0.914	meters
miles	1.609	kilometers
millimeters	0.039	inches
centimeters	0.393	inches
meters	3.280	feet
meters	1.093	yards
kilometers	0.621	miles
WEIGHT		
ounces	28.350	grams
pounds	0.453	kilograms
grams	0.035	ounces
kilograms	2.204	pounds
VOLUME		
fluid ounces	29.573	milliliters
pints	0.473	liters
quarts	0.946	liters
gallons (U.S.)	3.785	liters
milliliters	0.033	fluid ounces
liters	1.056	quarts
liters	0.264	gallons (U.S.)
TEMPERATURE		
°C = (°F - 32) x .555		
°F = (°C x 1.8) + 32		

Inches	Decimals of foot	Milli-meters
1/16	.0052	1.5875
1/8	.0104	3.1750
3/16	.0156	4.7625
1/4	.0208	6.3500
5/16	.0260	7.9350
3/8	.0313	9.5250
1/2	.0417	12.700
5/8	.0521	15.875
3/4	.0625	19.050
7/8	.0729	22.225
1"	.0833	25.400
2"	.1667	50.800
3"	.2500	76.200
4"	.3333	101.60
5"	.4167	127.00
6"	.5000	152.40
7"	.5833	177.80
8"	.6667	203.20
9"	.7500	228.60
10"	.8333	254.00
11"	.9167	279.40

Robert Abernathy

"Rite in the Rain"®
ALL-WEATHER WRITING PAPER

Robert Abernathy

Name Russell R. Cason
Op Tech Site Manager
Address 4100 N.W. Loop 410, STE. 230
San Antonio, Tx. 78229
Phone (210) 731-0000

Project Minnesota ANG B SI
Minneapolis, MN
July - August 1995
1315-193

"Rite in the Rain" - a unique all-weather writing surface created to shed water and to enhance the written image. Makes it possible to write sharp, legible field data in any kind of weather.

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J. L. DARLING CORPORATION

DAVE TOMSAGER

CONTENTS

PAGE	REFERENCE	DATE

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Col. Wolf CIVE (612) 725-5619
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(FAX)
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Karen Satterfield P.m. 660-0901
John Morris (Home) 678-3388
" " Pager (800) 719-6454

July 31, 1995

0700 Breakfast meeting w/ OPTECH crew: Russ Cason (SM), Iris Arredondo (Decon), Jon Williams (SSO), & Joe Byrd (GC). Discussed events of the day.

0800 Finish Breakfast Begin MOB To ANG-B. Load Car w/ Equip.

0810 DeBark motel.

0830 Arrive at ANG-B - meet w/ Capt. Hurst

0900 Meet w/ Dave Tessaker (Base Civil Engr) Discuss Utilities to be marked ASAP

0920 Tour Site with Capt. Hurst. Decon Area on Washrack near Soil Stockpiles. Full use of hose & Bulk Water.

0945 Return to BLDG 642 OPTECH Head Quarters.

1030 Mark Boring locations @ Site # 2, BLDG-687, Base Utilities marked, water & sewer.)

1100 Finish marking Loc. for 873-001B4, 2B4, & 3B4 + 1MW. Truck located over 1B4. (will return to mark later) All Borings marked as per site plan.

1105 Mark Loc. for 801-001B4, 2B4, 3B4 & 1MW as per site plan.

July 31, 1995

1128 Mark Loc. 541-001B4, 2B4, 3B4, 4B4, 1MW & 2MW. Ground measurements are inconsistent w/ work plan. Will verify Loc. of Tank w/ Civil @ Base.

1210 Arrive Back @ BLDG-RC 642. Call Dave Groutage w/ Maxim Drilling - (Huntington) set up Drilling Crew to Arrive @ 11-12 Tomorrow if Utilities are Cleared.

1215 Visit Civil BLDG w/ Dave Tessaker Drawings not ready yet. Lt. Rain Beginning to fall.

1245 Heavy Rain Falling.

1300 Take Lunch off Base.

1400 Return from Lunch

1515 Unload Supplies & Rental equip.

1530 Mark Loc. @ Site #1 For 651-001B4, 2B4, 3B4, 1MW, 2MW, 652-004B4, 5B4, & 6B4.

1645 Finish Locations. Go back to BLDG 642

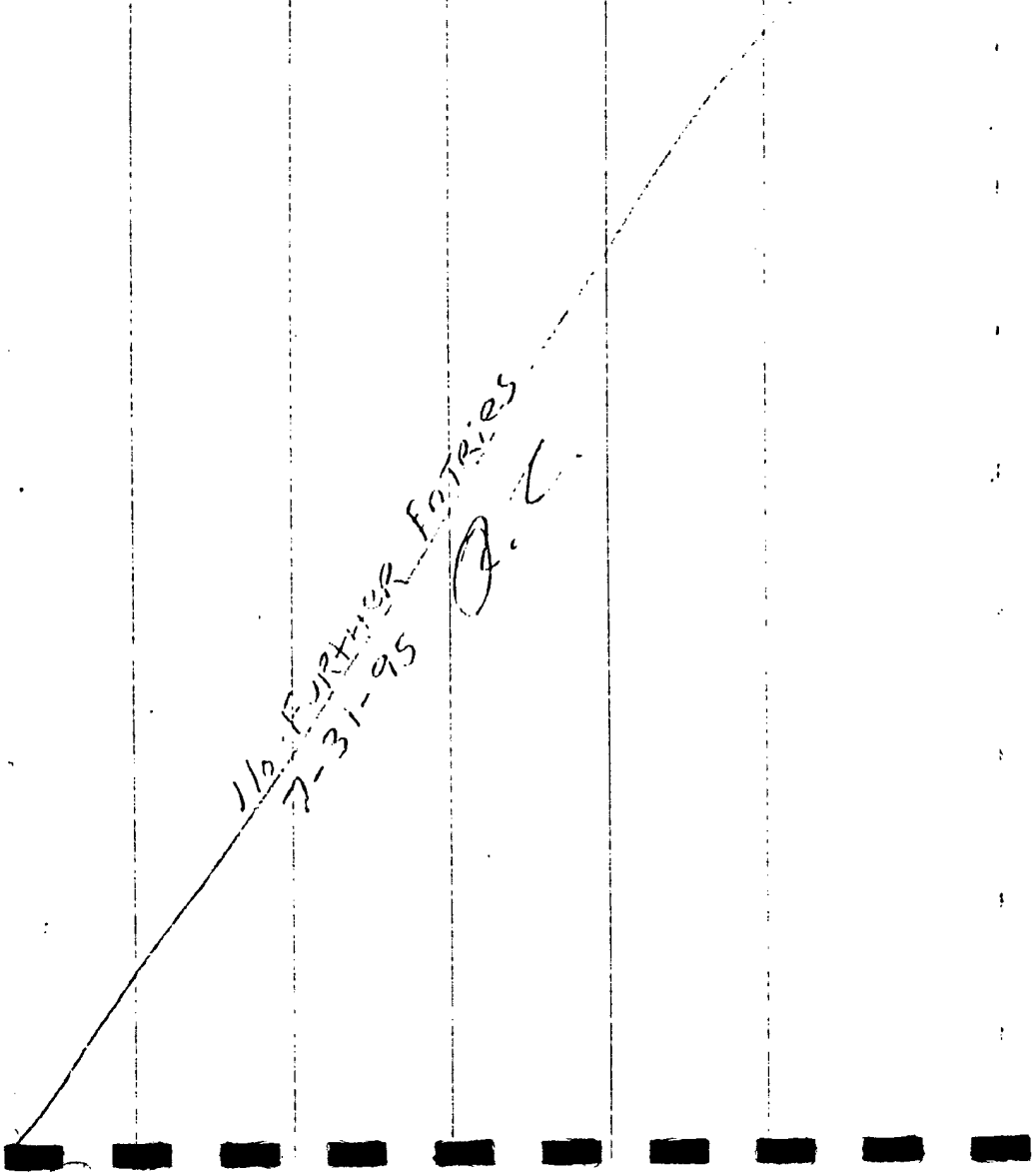
1700 Off Base

1710 Arrive @ Target For Stopping. - Buy Mason Lines & Water Bottles.

1730 Debark for Hotel

July 31, 1995

1740 Arrive @ Hotel. Sample Buttles
From SPC Arrive @ Front Desk.
1755 Begin Brass Sprue Recon.



August 1, 1995

0600 Load Van w/ Equipment.
0610 Debark For Base.
0628 Arrive @ Base Guard Shack to Get Security Passes. Mob to Contact Club for Breakfast Meeting.
0710 Hold Safety meeting @ Contact Club (R.C., J.B., J.W., T.H.).
0720 Finish meeting — Mob to Bldg. 642
0730 Check in w/ Loren Hubert in Brief on Daily Activities Planned.
Call Dave Grotage w/ Maxim About Cone Rentals & Tile Pulse — will be on the Rig.
0745 Attempt meeting w/ Dave Tonsager — Dave in STAFF meeting. Mob Equip. For Today.
0750 Weather Clear, Dry, Temp in Low 70's Forcast to Hi 80's.
0850 Mob to CIVE to meet Public Utilities Locators - minnegasco onsite.
0858 ~~ASF~~ RSI onsite. NSI (Arian) All Clear w/ NSP At Locations.
0901 US West onsite (MARK) 659 Clear 665 Clear 687 Clear 2 on 680 - and 684

August 1, 1995

0901 Cont. Minnegasco Clear on All except Bldg 659.

0915 Visit Bldg 659 w/ Minnegasco (Fred) - Drill Area is Clear.

0930 Meet Terry (CIVE) @ Bldg. 659 To verify Location of UST Pit on Ground. Terry verified that markings on ground were accurate. Location of Trees and Paved Areas on Plan are incorrect. Will Remeasure To Confirm & Modify Site Plan.

1030 Meet w/ ~~Dave Graunke~~ R.C. Dave Toasso (CIVE) Check out Locations @ Site No 4 Site #1 - Site #4 Clear. Site No 1 Adjust 1MW Location into Asphalt Adjust 3 BH 3 Ft. Closer To Asphalt.

1115 Drillers onsite Tommy (Driller) Shane (Helper) Checked Rig - Rig old But no Leaks Apparent. Drillers Steam Clean Back of Rig & All Tools. Build Decon Pad To Catch Cuttings.

1145 Op Tech @ Lunch

1215 Driller's onsite - Line up on

1230 Set-up Decon Tables & Geol. Table.

August 1, 1995

1300 Safety meeting w/ Drill Crew.

1320 0-1½' Boring 651-001BH

1330 Pull 0-1.5' Sample Black Clayey Sand, some Fe Stn. 0 ppm Bo PID, 20 ppm ATHA.

1340 Pull 3.5-5' Sample 10/17/23 Bls, Brown Sandy Clay Bo PID=0, ATHA = 0 ppm.

1350 Pull 8.5'-10' Sample 12/15/20 Bls Dk. Gray Clayey Sand, Fn Grn, w/ Frag. of Dk Gry Grn Shale & Ls.

1410 11.6' HSA Refusal, Auger Bit "Dry as a Bone".

1420 Line up on Boring 651-002BH

1425 Pull 0-1.5' Sample Brwn, loose Sand, med. Grained, Bo PID = 0 ppm, ATHA = 0 ppm.

1435 Pull 3.5-5' Sample Brown loose Sand, med Grained, Last 6" is Dk Gray Clay, Bo PID = 0 ppm, ATHA PID = 0 ppm

1445 Pull 8.5-10' Sample - Dk Gry Sandy Clay w/ Quartz Gravel, Bo PID = 0 ppm, ATHA = 0 ppm.

1515 Take WL in 651-002BH = 9.4' BLG.

August 1, 1995

1515 Cont. CPT. Hubert onsite

1518 Drillers W/O Cement Grout From Office.

1525 WL in 651-002BH WL Rose To 7.2 BLG.

1545 OP Tech Break Down Decon Station Drillers Still W/O Cement.

1645 Fill out CoC and Package Samples.

Samples Sent: 651-001BH 0-1.5'
651-001BH 8.5-10'
651-002BH 0-1.5'
651-002BH 8.5-10'
Trip Blank

1700 Mob To GC Room - Drillers Still W/O Cement: Cement Arrived But Was Directed To Bldg 612 Instead of Site. Bldg was Locked up Tight so Drillers Had To Go Back To Office For More Cement-Bentinite Grout.

1710 Fill out Daily Report.

1740 OP Tech (J.B., J.W., I.A.) Off Base To Fedex & Motel R.C. out Drill Site For Grouting. Drillers Still W/O Grout.

1755 Driller's Helper onsite w/ Grout.

August 1, 1995

1755 Cont. WL in 651-002BH = 6.3' BLG, Begin To Mix Grout. & Pres Tremmie

1810 Finish Grouting 651-002BH Line up To Tremmie 651-001BH. No Water in BH.

1830 Finish Grouting 651-001BH To Surface.

1845 Drillers Take Grout Tank To Decon Area For Cleanout.

1850 Drillers Off-Site

1855 OP Tech Off-Site.

1915 Arrive Back @ Hotel

No Further Entries
8-1-95 R.C.

August 2, 1995

0550 DeBark Hotel

0555 meet @ Denny's for Breakfast meeting.

0645 DeBark Denny's For Base.

0700 Optech on Base - Load up Supplys in vans. Drillers NOT onsite.

0725 Optech Crew @ UST Site #4 To Rig up Decon & Sample Station.

0755 Drillers on site

0805 Collect EB For 651-001 EB

0810 Collect @ 651-001 3RC BH 0'-1.5' & Dup

0815 Collect 0-2' And Dup. 10/8/10/5 BLs Bo PID = 1.2, ATHA PID = 1.9, Brn Clayey Sand, med Grn, SBRND

0830 Collect 3.5-5' 4/6/10 BLs, Bo PID = 175 DK, 338 ppm, ATHA = 1.9 DK Brn Silty Sand, med Grn, SBRND.

0845 Collect 8.5-10' 4/11/32, Bo PID = 175 ppm, ATHA = 16.2 ppm Grn-Gray Sandy Clay w/ Gravel, Gravel in Bottom 3" Wet @ 9.8'. Hole Collapsed.

0900 Move Rig To 652-004 BH

0915 Sample 0-1.5' 10/6/5 Brn-Bk Sandy Clay w/ Sand Stringers & Gravel, Bo PID =

0915 Cont. 1179 ppm, ATHA 258 ppm

0930 3.5-5' Sample, 1st 6" Brn med-Fin Grained Sand, Poorly Sorted, Subangular Upper Portion of Sample is Brn Clayey Sand, med. Grn, Subang. Bo PID = 0 ATHA = 0 ppm 2/4/5 BLs

0945 Collect 8.5-10' Sample 1/1/2 BLs Brn med Grn Sand, well sorted, Subangular. Wet @ 9.5'

1005 Move Rig To 652-005 BH.

1020 Collect 0-1.5' Sample. 5/5/5 BLs Brn Sandy Clay w/ Gravel, ~~Bo PID = 0 ppm, ATHA = 0 ppm~~ R.C. Bo = 144, ATHA =

1035 Collect 3.5-5.5' Sample, 7/14/16/1 BLs. Brn Clayey Sand, med Grn, well sorted, SUBRND. Collect MS/MSD

1050 Collect 8.5-10' Sample 5/11/14 Lithology as 3.5-5.5' Sample w/ Some Gravel, Bo PID = 3, ATHA = 78 ppm.

1115 Collect MS- R.C. 13.5-15' Sample 1/1/1 Grn-Gray Clayey Sand, med Grn, well sorted, Piece of Black Plastic Hunk on Sample Shoe - Could be Tank Pit Liner

August 2, 1995

1125 Give order to Grout 651-005BH Immediatly To seal Poss. Liner Puncture.

1135 Contact Loren Hurst & Mike Kubitz About Puncturen Liner. Mike Gave OK To Repair 652-005 BH Further South of Location. Ditch All Samples From 652-005BH

1215 Finish Grouting 651-005 BH 652-004BH & 651-003BH. Drillers To Lunch

1245 Drillers To Decon R.C. To Lunch, IA To Lunch.

1320 Move Rig onto 652-006 BH Loc.

1325 Collect 0-1.5' sample 9/13/13 Bls Brn & Blk Sand, med. grained to Fine Grained, Poorly sorted, Sub Ang. Bo PID = 0 ppm, ATHA = 0 ppm.

1340 Collect 3.5-5' Sample 3/6/13 Bls Brn Sand, med Grn To Fine Grn, poorly sorted, Sub Angular. Bo PID = 0 ppm ATHA = 0 ppm.

1355 Collect 8.5-10' Sample 11/20/32 Bls Grn-Gray Sand Clayey Sand med to Fin Grained w/ Gravel, Poorly Sort, Sub Angular

August 2, 1995

1355 Cont. Bo PID = 0, ATHA = 0.

1410 Collect 13.5-15' Sample 17/37/34 Bls DK Gray Sandy Clay w/ Limestone Fragments, Bo PID = 0 ppm, ATHA = 0 ppm.

1425 Driller Hit Hard Spot @ 15.9' Drill To 16.4'

1430 Pound Splitspoon @ 16.4 100 Bls For 1/10 Foot. Ref-Sal. Gray limestn Powder on Spoon. Dry - No H2O!

1440 Line up To Grout 652-006 BH.

1455 Get Security To leave Wash Rack Decon Area Open. Will Lock Gate when done.

1525 Drillers Have Blockage in Grout Pump.

1630 Drillers Decon Augers & Grouting Equipment.

1645 Drillers offsite.

1650 Fill out COCs & Sample prep.

1730 Lock Wash Rack Area up.

1800 Off Tech Off Base.

1807 Arrive @ Fedex For Sample Drop off.

1817 Debark For Hotel

1830 Arrive @ Hotel

August 3, 1995

0550 DeBank Hotel for Denny's

0555 Arrive @ Denny's for Breakfast & Planning Meeting.

0630 DeBark for Base

0655 Arrive @ Base & Load up Van.

0730 Mob to UST Site #4 & Set up Work Stations. Weather - Overcast Upper 70's Humid.

0805 Collect Equipment Blank through Split Spoon.

0815 Drillers onsite - Hold Safety Meeting.

0825 Line up Rig on Loc 652-007BH Rig up Exclusion Zone

0830 Collect 0-2' Sample 9/5/10/10, BG 0-1' Black Topsoil, 1-2' Black Clayey Sand, Coarse to Fine Grn, Poor SRT, SubAng, Strong HC Odor. BO PID = 254, ATHN = 145 ppm.

0840 Collect INT From 2-3.5' for Duplicate of 1-2' Sample, 5/5/7 BG as 1-2' But w/ Cobbles, Strong HC Odor BO PID = 429 ppm ATHN = 115

Slightly moist, BO PID = 327, ATHN = 419 ppm.

August 3, 1995

0920 Collect 8-10', 3/5/7/18, Grey Sandy Clay, some Dark Grn Shale pieces Collect MS/MSD.

0935 Collect 13.5-15', 12/24/27, Gray Green Clayey Sand, Med. To Fin Grained, Poor SRTD, SubRnd.

0945 HSA Refusal @ 15.3', No water encountered.

0950 Loc. Rig @ 651-001MW Loc. Leave HSA in Ground @ 652-007BH. Drillers Rig up For 6¼" Augers.

1016 WL measure in 652-007BH — No water indicated.

1020 Driller Down Time For Parts

1040 Attempt to Call Mike Kunatz Re: Reloc of 651-002MW Farther South to Avoid Contamination. Mike not in - Called John Morris, Not in either.

1100 Back onsite. Jack & John to lunch.

1130 Begin Sampling 0-1.5' 651-001MW. 7/11/19, 0-.5' Black Topsoil, Roots, .5-1.5' Black Clayey Sand, Med-Fin Grn, Poor SRTD, SubRnd, w/ Gravel,

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Bo PID=0, ATHA=0 ppm.

1140 Collect 3.5-5, 3/6//6 Bls, Brn Sand, mgr grn, well sltd, Rnd. BoPID=0, ATHA=0 ppm.

1200 Collect 8.5-10 9-9.5 4/36/39/60 As Above w/ Gravel, Damp. 9.5-10 Hard Grn Blk Shale pieces w/ Fin Grained well sorted, Sub Angular Sand, Damp.

1210 WL in Boring 7.8' BLS, 10' TD.

1215 Optech Downtime To Talk w/ Client. Detailed Site To M. Kubatz (AWGRC) Appears we may Be in or near Tank pit. Suggested moving out Further N.W. of Present location of 651-001mw to Check Geology. Mike Agreed.

1305 Abandon @ 651-001mw, Drillers POOH & leave Tremmie Rod in Hole To Grout Hole. Decon Lead Augers.

1316 Drillers Gone To Steam Clean. Move New location of 651-001MWA 12' NW of Loc. of 651-001mw.

1340 Collect 0-1.5' Sample 11/10/12

[redacted] 0[redacted]5 [redacted]ck [redacted]p S[redacted] d[redacted]0.[redacted] 0.[redacted]1.5'

August 3, 1995

1340 Cont. Black Clayey Sand, medium to Fin Grained, Poorly Sorted, SBRND, w/ Gravel. BoPID=0

1410 Collect 3.5-5' 5/14/20, Brn Sand, med grained, mod sorted, subrnd, occassional cobble sized material, BoPID=0, ATHA=0 ppm,

1415 Collect 8.5-10', 12/21/25, Brn Sand, med grained, moderately sorted, subrnd, Red and Green Shale Frag. From 9-9.5', From 9.5'-10' As Above w/ Grn Shale Fragments, Pyrite, wet @ 9.5.

Remark: @ 1412 Jon Williams measured water in 652-002BH @ 14.9' BLS & @ 651-001mw 6.9' BLS (1410).

1420 Down Time To Talk w/ Mike Kubatz About Geology in Borings, Apparently MW is placed in Native soil - Not in Tank pit. WL is Higher on N. Side of Pit Due To Coarser Grained & Cleaner Sands. M. Kubatz said To Complete Both mws Above Bedrock.

1455 Return To Site Tell Drillers To

August 3, 1995

1455 Rig Down For the night Leave Rogers in Hole of 1MWA, Grout 1MW and 7BH Tonight. Tommorrow Drill out 1MWA To Bedrock & Set well.

1525 WL in 1MWA = 7.6' BLS

1529 WL in 007BH = 14.9' BLS (15.3 TD)

1542 WL in MW-4 (ARB) = 15' BTOC, OR 12.4' BLS. PID = 0 ppm, NO HC ODOR.

1550 Drillers Finish Grouting 1MW.

1600 Grout 007BH, Cement/Bannite Grout.

1610 Prepare Samples & COCs, Load & Prep Equipment For Next Day

1709 Check Lock on Wash Rack Area, Lock GC Room Gate.

1710 Op Rech off Base.

1721 Drop off Samples @ Fedex For Pick up @ Houston Fedex 8-4-95.

1828 Arrive @ Hotel

No Fumigation on Trip 8-3-95 RC.

August 4, 1995

RC

0650 Leave Hotel For Denny's

0655 Arrive @ Denny's For Breakfast.

0640 Leave Denny's

0655 Arrive @ Base Get equipt Ready For Site. Discuss Planned work.

0730 Leave For Site No. 4.

0815 Drillers onsite w/ Rig.

0820 Hold Safety meeting w/ Office & Drillers.

0830 Rig up To Complete Borehole of 651-001MWA

0832 WL in well = 7.3' BLS.

0850 Look Likes Rain Approaching From West. Collect 13.5-15' interval.

0905 High winds - Breakdown For Severe Weather - Possible Tornado weather. Rig Down site Fast!!!

0910 NWS issues Severe T-Storm Warning For Area. Derrick Down on Rig.

0940 Talk w/ Mike Kubatz - O.K To Complete well w/ Shorter Screen & Less Sand/Bentonite Seal Due To Position of Hard Rock.

1052 Raining (LT) to Hard To

August 4, 1995

0850 ~~Looks like rain approaching fast from~~ RL, the west.

1052 Cont. ~~Set well.~~ JJC. Weather looks like it is breaking to the west. Sand on Tank Crew & Drillers [illegible] LT. RAIN.

1120 Continue well operations. Rain stopped.

1135 HSA refusal @ 15.2' WL = 7.2' BLS

1145 Drillers con to get sand pack in HT. 40 mesh sand, effective dia 0.5mm

1200 Set 2" dia, 0.010 slot PVC Screen (9') + Bottom cap, 2" PVC Sch 40 To surface.

1210 Place sand pack. Measurements show hang up @ shoe bottom of auger, attempt to dislodge. Driller apparently verified obstruction. Continue to place pack.

1315 Grey-Gray clay w/ apparent HC odor was observed on auger PIT. Retrieved.

1330 Talk w/ Mike Kubatz (ANGRC) for MW in loc. 651-02mnw. If situation is encountered where dry rock and no to minimal water is encountered - set hardrock

1330 Cont. Well. If conditions clearly indicate perched water complete as "overburden" well (conventional)

1400 Set grout to 1' BLS.

1405 Drillers prep. To decon augers. Talked w/ Drillers about setting 651-02mnw into rock but because Drillers are improvising the part cannot be used to set into rock. Part may come from Duluth job in time tonight to work on Saturday & complete well.

1430 Begin to rig down site for today

1450 Rain & Lightning setting in - Rig down site. Drillers recieve proper equipment to do job but heavy rain & lighting preclude that.

1543 Depart & Drillers offsite.

1605 Arrive @ Hotel.

No further entries.

R.C. 8-4-1995

August 5, 1995

0550 DeBank Hotel.

0555 Arrive at Denny's for BRKFST. Meeting. Go over planned work.

0610 DeBank Denny's for Base.

0652 Arrive on Base, Prep Equip. & Supplies.

R.C. ~~0825~~ 0725 Of Tech @ Site #4 Setup Equipment

0740 Drillers onsite move soil Drum From 651-001MW A To 651/652 Spoils Pile At Wash Rack Station.

0813 Rig up on Loc. 651-002MW. Set up Exclusion Zone.

0825 Drill To 1' About 6-7" of Asphalt overlying Subgrade Base.

0830 Collect 1.5-3' BRN SAND med. Gra well SRTD, SGRND, some RK Frags & Gravel, Slight

0840 Collect 3.5-5' RD-BRN CL w/ RK Frgs. & FE STN. BO PID = 6.3 ATMH = 79 ppm. 2/8/5 Bls

0900 Collect 8.5-10' RD-BRN CL A/A w/ Fe STN. BO PID = 0 ATMH = 0 ppm 17/23/17 Bls.

0925 Collect 13.5-15' GRN CLAY w/ occ GRAV. BO & ATMH = 0

0930 Leave Augers 2' off Bottom & Let Borehole Set For WL Meas.

August 5, 1995

0940 Drillers off To Dump soil @ soil pile. T.D. Borehole = 14.7'

0948 Take WL Meas. in ATMH 651-001MW PID = 22 ppm WL = 5.3' BLS. Water level rose ~2' since well was set. Screen @ 5.0' BLS.

1000 WL in 651-002MW = No Water Indicated @ 14½', 0.2' of Rubble on Bottom.

1005 Drilling To Bedrock. Top of Bedrock is 14.7' - Makes 13.5 - 15' Actually 13.5 → 14.7'.

1030 Drill To 15.3 - Ream out Hole.

1035 Auger. Zoom w/ Plug & Rods. Plenty of Limestone Powder (Lt Gray) on Pilot Bit. Powder is DRY.

1055 Drillers Back w/ 4" Steel Casing. Strap Casing @ 21.4' From Pin To Box.

1105 Drillers offsite To get proper size Tremmie Pipe To Grout through Augers

1200 Drillers Back w/ Tremmie

1207 Prepare & mix Cement/Bentonite Grout.

1220 Pumping Grout through Augers.

1240 Annulus Grouted To w/i 1.5' BLS.

R.C.

AUGUST 5, 1995 (SAT.)

1245 BREAKOUT GROUT EQUIPMENT. AND BEGIN SITE CLEANUP.

1300 PLACE 3 TRAFFIC CONES AND FLAGGING TAPE ON RISER. RISER EXTENDS APPROX. 5 1/2 - 6' ABOVE GROUND LEVEL. DRILLERS DO NOT KNOW HOW TO CUT OF RISER W/ TORCH SO LEAD DRILLER (TOMMY) WILL DO SO ON MONDAY AUG 7th TO ACCOMODATE FLUSH COMPLETIONS.

1330 OPTECH AND DRILLERS OFF-SITE

1345 TAKE LUNCH @ "SANDY'S TAVERN"

END OF WORKING DAY.

NO FURTHER ENTRIES
8-5-95 R.C.

AUGUST 7, 1995 (Mon.)

0550 DEBANK HOTEL FOR DENNY'S

0555 ARRIVE @ DENNY'S FOR BREAKFAST MEETING. DISCUSS UST SITE #1 CONDITIONS.

0640 DEBANK FOR BASE. WEATHER: SCATTERED RAINSHOWERS, LOW 70's.

0659 ARRIVE ON BASE. RIG UP EQUIPMENT AND SUPPLIES.

0800 LEAD DRILLERS TO UST SITE No. 1. SAMPLES I.D. = 591-00...

0810 HOLD SAFETY MEETING AND SITE ORIENTATION W/ DRILLERS & OP TECH

0820 LINE UP RIG ON LOCATION 591-001BH.

0830 COLLECT 0-1.5' 6" ASPHALT-REST is ROCK & BRICK SUBGRADE TO 1.5' NO PID

0835 1.5-3' 4/7/10 BRN SD, M GRN, F SAT, TR. TO FIN, F SILT, SBRND, W/GRAV & SIT. SLMOIST BO=14.6 ATHA=1.1 PPM

0845 3.5-5', 4/6/7, A/A W/ WOOD FRAG. BO/IO=0, ATHA=0.

0900 8.5-10' 3/5/6, LT BRN SAND, M GRN, W SAT, SBRND, BO/IO=0 ATHA=0

0910 13.5-14.5' 10/18 & 20 FOR 0', LT BRN SAND & GRAV. CS GRN-MED GRN, F SAT, SBRND, W/RK FRAG & SHALE PIECES, WET @ 14'.

0930 RC

0930 16-17.5 GRN GRY [illegible] D&P W. SAND

AUGUST 7, 1995

0940 Take WL through Augers on 591-001BH = 13.2' BLS

0950 Rig up on Location 591-002 BH

1005 0-1.5', Black Topsoil, SDY/LOAM. Bo PID = 0.8 ATHA = 0 2/3/10.

1010 3.5'-5' 6/10/11, Brn SAND med-Fine GRN, P SRT, SBRND w/ GRAVEL SIT, Sli moist Bo PID=0 ATHA=0

1020 8.5-10' 2/4/5 A/A Bo PID = 0, ATHA = 0 PPM

1030 Collect 13.5'-14'. 100 Bls 5/10. A/A w/ ironstone layers, WET @ 13.5' BLS. Continue To Run Augers on Rock To Verify Rock or Cobble. T.D. 591-002 BH @ 14.0' BLS.

1045 WL in 591-002BH = 13.2' BLS.

1055 Rig up on Loc. 591-003 BH

1110 Collect 0-1.5' Black Topsoil SDLM, w/ LS GRAV.

1130 Collect 3.5-5' 13/14/11, DK Brn SD, M-F GRN, P SRT, HYD. STAINED, SBRND, OCC GRAV., MOIST, Bo=0, ATHA=0 PPM.

1140 Collect 8.5-10' A/A, Bo PID = 0 ppm, ATHA PID = 0 PPM. 1/1/2 R.S. 10/3

1153 Collect 13.5-15' 23/11/12, Gry-Grn LS, w/ RD-Brn Smy Clay, Foss, WETE 13.5 No PID ppm

1205 Drillers OFF For Lunch, OP Tech

AUGUST 7, 1995

1205 (I.A., J.B., J.W.) OFF FOR LUNCH, WL measurement in 591-003BH = 14.1' BLS.

1230 Choose 591-003 9-10' Sample For MS/MSD.

1245 Drillers & OP Tech Back From Lunch, Rig up To Grout.

1300 Grouting 591-003BH To Surface w/ Tremmie & Cement/Bentonite Grout. NOTE: @ 1158 J. Williams took WL in 591-001 BH, WL = 13.2 BLS.

1315 Grout 591-002 BH

1319 WL in @ 591-001BH = 12.9' BLS, PID on Hole = 1.3 ppm.

1330 Rig up To Grout 591-001BH

1435 Drillers Back From Decon. Augers, Line up on 591-004BH.

1443 Collect 0-1.5' 3/6/7/ Bo PID=0 ATHA = 0 Black Topsoil.

1450 3.5-5' 4/4/4 R.S. 8 Bo PID = 0, ATHA=0 SW, Sli moist OCC GRAV.

1508 8.5-10' 1/3/7, SW w/ BLK STAINING (Sli Greasy) Pull Duplicate (ABQ) As 591-001 DUP.

1521 13.5-14', 100 For 4/10' Gry Gan ls Fragments w/ R.C. Robbinsky Foss, Dry. Weathered.

~~1521 4/4/4 Sand A/A~~ AUGUST 7, 1995

~~R.C. BO PID=0, ATHA=0, Black Stains, No. Bls=10'~~

1535 15-16.5, 100 R.C. 2/13/21, Gan Clay, au pyrite Bo PID=0, ATHA=0.

1546, 18.5-19.0, 100 For 5/10' Gry To Brn ls Frag. Sli Foss, w/Silty SD Layers Bo PID=0, NS For ATHA. ▽ 18.5' Expect Solid Ls Rock After This Int.

1550 Wait on Water To Rise in Borehole.

1618 WL in 591-00434 = 15.6' BLS. PID = 0 ppm. TD = 19' BLS.

1620 Drillers Prep To Grout w/ Trammie 591-00434.

1625 R.C. offsite To Prep Cocs & Samples For Shipment.

1730 OPTECH Check Decon Area, Drillers Failed To lock Gate. Checked w/ Security - They Said Gate was locked Like That & Drillers Notified Security.

1740 Check Site, move soil off Asphalt.

1752 OPTECH off Base To Fedex.

1803 Arrive @ FedEx

1816 Dr Bank Fedex.

1855 Arrive @ Hotel

AUGUST 8, 1995

0655 Dr Bank For Hotel R.C. Denny's For Breakfast meet. Discuss UST site #2.

0636 Dr Bank For Base.

0650 Arrive @ Base, Notify Bldg 687 Personnel About Drilling Today. MoB Equip. & Supplies.

0730 Arrive @ UST Site #1 For Setup, Grout Fallen Back To 1' BLS. Cover w/ Dirt. Drillers on site @ Decon Area

0810 Drillers @ UST Site #1, Line up on 591-00114w.

0845 0-1½' 8" Asph. Subgrade To 1½'.

0847 1½-3', 3/5/6, DK Brn Sand, moist, Asphalt Frag, NS PID=0 ATHA=0

0900 3.5'-5', 12/11/20 Ald w/ Thin Clay Layer, Black Stains - Moist. Bo PID=0 ATHA=0

0920 8.5-10' 2/6/11 Brn So mo-Fn w/ Grav Bo PID=0, ATHA=0.

0934, 13.5-15, 25/16/12 Ald Brn Sandy Clay w/ Gravel & Ls Frag wet @ 14' Lower ½' is Gry Clay, w occ Gravel.

1015 Auger Refusal, Full of P By Hole 0.5' & wait For water. Pilot Bit Dry!

1230 No Water in Hole

August 8, 1995

1023 Take WL through augers on 591-001MW PID = 4.3 ppm, WL @ - No water.

1035 Pull up augers to 13' BLS above water zone, WL in Hole = No water PID = 0 ppm.

1055 WL in Boring - No water. Zone @ 13.5-14' in Boring & Borehole of 591-001MW is apparently 15' or so layer of moisture trapped Temp. Above Grn Clay layer. Not enough water to make a well, ~~Bottom~~ R.C. Decision made to Drill to Bedrock & Set Casing 6" in To Bedrock. For open Hole Comp.

1100 Rec. To Driller we are already 0.2' in To Bedrock @ 17.9'.

1115 Drill To 18.4' & $\frac{1}{2}$' in To Bedrock Prepare to set Casing. Pilot Bit is Dry. Jon. Will. & Iris To Lunch.

1120 Drillers off To get Steel Casing

1140 Drillers Back W/ Casing - Take lunch

1200 Drillers off From lunch Rig up To set Casing. Bottom of Hole @ 18.4', Drive Casing Shoe To 18.4' w/ Hammer. Secure well Head w/ Locking Cap.

August 8, 1995

1310 Finish Grouting 591-001MW.

1400 Clean up Site & move To Down

1435 Line up on 873-001BH, H&D Safety meet.

1440 1-2.5' Cly SD, Rddsh, Black Stringers Poss Rel. To Asphalt? No PID

1447 3.5-5', Brn SD, M-F Gvl, Rsrt, SBrnd, w/ Brn. BoPID = 0, ATMH = 0 ppm

1502 8.5-10', Brn Cly, occ Pyrite, BO PID = 10.6, ATMH = 0 Lost Circ @ 10.7' BLS.

1510 Hit Bedrock @ 10.7' BLS, HSA Refusal.

1520 WL mem. 873-001BH = 8.2' BLS

1540 WL = 7.78' BLS. PID = 0.4 ppm

1542 Rig up To Grout 873-001BH.

1545 Collect Field Blank 873-001FB

1615 Drillers off-site - Up Team To GC Shed.

1645 Check Decon Area. Lock Gate.

1655 Decon Basic For Fedex

1710 Drop off Samples For Delivery Fedex Air Bill 889612134 11

1745 Arrive @ Hotel, Coolers For Ground Water Sampling in (6).

August 9, 1995

0550 DeBark Hotel for Denny's

0555 Arrive @ Denny's & Hold Breakfast meeting. Oatmeal, Toast, Orange Juice.

0633 DeBark Denny's For Base.

0700 Op Tech on Base, mob equip.

0730 Set up on UST site (873 bldg).

0800 Drillers onsite

0815 Safety meeting

0820 Begin Drilling Asphalt on 873-002 BH

0825 0-1' Asphalt (6") & Subgrade No ID Taken No Sample Collected.

0828 1-2.5' Brn SW, m-Fgrn, P-SRT, SBRND, w/ Gravel, Blk Clay Layer @ 2'. Bo = 0 BTHA = 2.1

0840 3.5-5' Gray SD Cly, w/ Gravel, Some Cobbles, Fe Stn, Bit. mat. Bo PID = 0, ATHA = 0 ppm.

0851 8.5-10' LS, Collect 873-001 Dup @ 9-10' weathered To 9.5', Gray Clay w/ Pyr. To 10' Bo = 0 ATHA = 0.3 ppm.

0900 Take WL in 873-002 BH Bubbles

Bubbles = 8.2' PID = 0 ppm.

0930 Take WL in 873-002 BH = 8.2' BLS

PID = # 0.5 (HNU Ref. @ 11.7' BLS).

0940 0-1' 6" Asphalt 6" Subgrade

0945 1-2.5' Brn Sand, m-Fgrn, w/ Gravel, P SRT, SBRND Bo PID=0 ATHA=0

[redacted]

Cobbles, Iron Staining Bo = 0 ATHA = 0 ppm.

1010 8'-10' Grn-Gray, occ. Pyrite, Collect MS/MSD. Abandon Ref-T.D. @ 11.3' BLS

1020 WL in 873-003 BH = 7.3' BLS

WL in 873-002 BH = 8.2' BLS.

1025 Rig up To Grout 873-002 BH.

1055 Finish Grouting 873-002 BH.

Water in Hole makes Grouting Amess.

1056 Rig up To Grout 873-003 BH,

Problems w/ Grout Pump Not Mixing Clumps.

1135 Finish Grouting 873-003 BH

Drillers To Decon & Lunch

1240 Drillers Back From Decon & Lunch.

1250 Set up on Site #3 & Rig up on 801-001 BH.

1321 0-1', 6" Asphalt, 6" Subgrade, No Sample Collected, no PIDs.

1325 1-2.5' Brn SD, m Grn, WS, SBRND Bo = 0, ATHA = 0.

1336 3.5'-5' RD-Brn Clayey SD, m Grn, w/ Gravel. Bo = 0, ATHA = 0

1345 8.5'-10' Gray-Green Clay, HC odor

AUGUST 9, 1995.

BO = 292, ATHA = 587 ppm. (801-001 DUP) (1345)

1400 13.5 - 13.8'; BRN m GRN-F GRN SAND, PSRT, SBRND, W/ IRONSTONE LAYERS BO = 0 NS FOR ATHA WATER @ 13.0'

1410 HSA REFUSAL @ 15.5', 7' OF WATER INDICATED ON DRILL RODS

1414 WL in 801-001BH = 9.6' BLS. PID = 1.7 ppm

1420 COLLECT EQUIP BLANK 801-001EB

1420 LINE UP IN 801-002BH

1437

1442 HIT BLACK LINER IN AUGER SAMPLE, MOVE SOUTH ≈ 15', 8' S. OF ASPHALT PATCH.

1505 REDRILL 801-002BH IN NEW LOCATION.

1510

1518

1530

1540 WL IN 801-001BH = 7.5' BLS

541 RIG UP TO GROUT ABANDONED (1ST) #2 BH.

AUGUST 9, 1995

1605 GROUT 801-002BH.

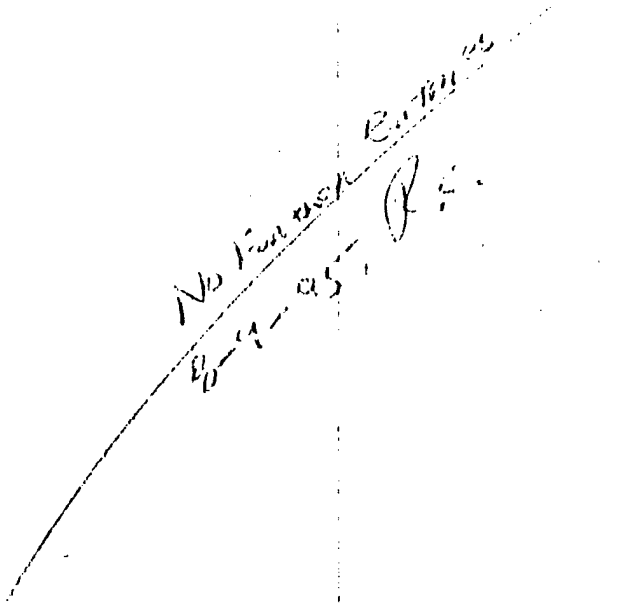
1620 RIG UP TO GROUT 801-001BH.

1635 LEAVE SITE TO PREP COCs & DEBRIEF BASE EM on SITES. JOHN WILLIAMS IN COMMAND OF SITE.

1745 FINISH COCs.

1810 CHECK SITES.

1820 OFF BASE.



August 10, 1995

0850 Debank Hotel for Denny's for BRKFST meeting.

0855 Arrive @ Denny's - OATmeal Again!

0630 Debank Denny's for BASE

0700 Arrive Base, Cal. equipt & supplies.

0920 Call M. Kubatz about Site #4. Will get O.K. via No Go for Deep well this after.

0815 Drillers onsite — Safety meet.

0830 Line up on 801-003BH

0833 Spud 801-003BH.

0836 0-1' 6" Asphalt over subgrade.

0839 1-2.5' Brn sndy, m-f grn, dry, sl mst, sl cly w/occ gravel B.PID = 0 ATHA = 0

0850 3.5-5', Brn sandy clay w/ occ gravel B.PID = 0, ATHA = 0 ppm.

0855 A/A w/ Higher clay content, Hit water @ ≈ 10'. WL @ 0905 = 6.6' BLS Let to drill to HSA refusal @ 11.3'. Let WL rise. 8-10' (9-10) collect MS/MSD

0937 WL in 801-003BH = +.3ppm D.C. 6.8' PID = 1.3ppm.

0950 Drillers line up Rig on Loc. 801-001MW Go to Decon 6¼" I.D. (10 in O.D.) Augers.

1015 Drilling 801-001MW, 0-1.5'

1029 1.5-3'

1033 3.5-5'

1055 8.5-10

1108 Auger hitting rock @ 11.5' stop & pull up 1' & center plug, wait for water.

1110 Stand Down For Lunch

1145 WL in 801-001MW through Augers = 9' BLS. WL in 801-003BH = 5.8' BLS. Augers plug. Blocking water in. Clean out Borehole & prep To set well.

1200 Setting well B of Hole = 12' BLS, Sump To 11', (7') Screen To 4', 2" PVC Riser To Surface, set Sand To 3' BLS Bentonite To 2' BLS Grout To 0.8' BLS. Surface Completion is Flush Mount.

1305 Finished setting Grout & Bentonite Seal.

1315 Set Top Surface Completion. Rig on site. R.C. & J.W. To check on Site

1430 Co

1430 COC's Filled out. Samples Iced in Coolers.

1515 Visit Site No. 1 For Site cleanup.

1600 Visit Site No. 3, Dallas still Preparing for SVE.

1630 Dallas Rig up for Grouting 873-003BH.

1640 Cut thru S. John to Hotel, J.B. & Rick Down at Site to Clean up

1710 Off Site with Rig.

1745 Arrive @ Hotel.

No Further on this 8-10-95 R.

August 11, 1995 (Fri.)

0550 Debbak Hotel

0555 Arrive @ Denny's For Breakfast Meeting.

0635 Leave For Base.

0700 Arrive Base, Set up Supplies & Equipment.

0730 Severe weather Setting in. NWS issued Severe T-Storm warning until 1000. Called Dallas To Delay until Severe weather Passes.

0810 Heavy Lightning & Rain,

0900 Lt. Rain, Lightning Still in Area.

0930 Rain & Lightning Abated, Visit Site No. 2 To secure Parking Areas.

0940 Drill Rig onsite - Set up on 873-001MW, OP Tech Set up Decon & Sample Station. Move Loc. 2 8' West To avoid waterline & Center MW in Parking Slot out of Normal Traffic.

0950 Hold Safety Meeting.

0958 Drill 873-001MW 0 to 1½' →

R.C.
August 10, 1995

1040 Rig Down for T-Storm. Front approaching, lightning to N.W.
1055 Rig back up to drill again & lightning passed over w/o event.
1110 Drill to 11.1' BLS surface, Rem to 12' wet @ 10' BLS. Pull up auger 1'± wait for water. HSA refusal @ 11.1. Have Drillers take ½ hr lunch.
1115 R.C. & J.W. to get lunch I.A. in charge of site.
1145 Take WL in 873-001 MW through augers. = 7.2' BLS., PID = 0ppm.
NOTE MW construction will be modified to use 1' Sand on Bottom
1203 WL in 873-001 MW = 7.15' BLS.
1210 Set Screen @ 4' BLS (TOS), 7' SCH40 2" 0.010 slot (2'-11') 1' Sand

August 10, 1995

1210 (cont.) on Bottom. 1' Sand above screen (3') 1' Bentonite 2' Grout.
1300 Drillers to Decon & set up Air Rotary (AR) OPTech Clean up Site No. 2.
1345 Cut off Riser on 651-002 MW.
1355 ≈ 3" water in Bottom due to grouting.
1358 Rig up Air Hammer & Rotary Assembly
* 1410 Drillers Air Hammer to large to fit down 4" Casing by ⅛ - ¼". Go back to shop & get Tricone 3 7/8" Bit. (Tricone Bit on Rig is rusted Rig Solid) and try for Air Hammer. Helper to complete surface pad
1500 Decon Boilers while waiting for Drillers.
1540 Drillers back on site w/ Tricone 3 7/8" Bit. Rotary Bit
1555 Drill out Casing
1600 15-15.5' Gray LS, 1-2 ppm, ATMP = 1.5
1605 15.5-17' Wht. LS ATMP = 0.5

AUGUST 11, 1995

1622 T.D. = 20.3, Let well rest & Check for water in Discharge.

1630 POOH w/ Bit for water check. Bit Dry & Functional RIH & Drill.

1635 20-22' Brn Limestone, Sli Foss.

1650 22-25' WATER EXITING DIVERTER @ 23.2' BLS Drill out To 25' BLS,

1700 POOH w/ Bit Take WL. meas. 10.6' BLS PID = 0.5 ppm.

1710 BIT OUT OF HOLE.

1725 Drillers OFFSITE — To10 them Tyvek me necessary.

AUGUST 12, 1995

0630 Debrm HOTEL

0635 Arrive @ Danny's for BKFST meet.

0715 Debrm. Danny's

0730 Arrive @ Base, Prep To Develop Wells.

0800 open 651-001MW. PID = 3.2 ppm, well Dry & in Recharge.

0807 open 801-001MW PID = 0.8 ppm

0812 open 873-001MW PID = 0 ppm,

0837 Begin Development of 851-001MW PID = 5.8 ppm. INITIAL DEPTH TO WATER = 3.39' BTOC well Depth = 11.4' WATER Column 8.01' WATER. Well T.D. = 14' BLS ∴ 2.6' SILT in Bottom 14.0 − 3.39 = 10.61' WATER in well casing. 1 vol = 1.73

0902 2.5 Gallons Developed Temp 71°F, Cond. 7.55, pH = 7.12

0905 5 Gallons, 68°, 748 mmho, pH = 7.0

0910 Stop Devel. — Rain, Lightning And Very severe weather.

0929 Back To Developing 651-001MW.

0932 7.5 Gal. 68.2°, 714 mmho, pH 7.39.

August 12, 1995

0936, 10 Gal. 67.2°F, 686 mmho, pH 7.5.
0942 12.5 Gal. 66.2°F, 630 mmho, pH 7.8°
0949 15 Gal, 64.5°, 594 mmho, pH 7.98.
0959, 17.5 Gal. 65.7°, 643 mmho, pH 8.2
1000 ~~WL~~ 12.c. 13.2' sediment level, 14' T.D. well. Stop work due to severe weather — Lightning.
1021 weather o.k., 21 Gal, 66.4°, 658 pH — 9.3 & rising — erratic pH, Recalibration indicates instrument malfunction.
1025 Quit for today due to rain & severe weather.
1030 Depart site for Gleason.
1043 Debark Base
11:21 Arrive @ Hotel

No further entries
8-12-95 R.C.

(mon) August 14, 1995

0650 Debark for Denny's
0655 Arrive @ Denny's for BKFST meeting.
0637 Debark for Base.
0650 Office on Base.
0700 Call M. Kubatz w/ cost estimate & start Contracting process.
0800 Visit UST Site #2 & set up, To Drill out 591-001mw.
0840 Drillers @ Decon station, Decon Rig and Drill Stem. Call Dave Grouting w/ Maxim Drilling about Drilling costs To 29' BIS Double Cased well Maxim To Fax Cost To Norma Garza Today.
0855 Driller Helper onsite w/ Torch To Cut of Riser To 591-001mw, Take LEL & PID. PID = 0.9 ppm Opposition on LEL. No water in Casing.
0915 Drill Rig onsite, Set up on 591-001mw To Drill out. ~~TAB~~ TAG Bottom of Grout @ 17.8' BIS.
0953 Begin Drill out of Casing.

August 14, 1995

0958 20 18-20'

1010

1022

1025

1030 2C-28'

1040 No water indicators in cuttings (DRY POWDER & CHIPS) CALL M. KUBAT WE WILL LET HOLE STAND TO SEE IF WATER ENTERS BOREHOLE & CALL BACK.

1100 Bottom ½" BIT SLIGHT DAMP - COULD BE FROM CONDENSATION.

1050 28'-30' LS, AIA DRY & WET @ 28' LEAVE HOLE OPEN FOR WATER TO RISE.

1140 WL @ 17.0' BLS. No HC smell

1143 CLEAN OUT HOLE.

1148 POOH W/ BIT.

1155 BREAKOUT BIT.

1205 BEGIN SURFACE COMPLETION ON 5 FOOTMAN "FIRE UP" AIR HAMMER.

1220 TALK W/ M. KUBATZ & DAN WALTZ W/ ANGRC. O.K. TO COMPLETE ADD DEEP WELL @ UST SITE No. 4 USING MUD ROTARY TO

August 14, 1995

1220 cont. BEDROCK, SET CASING AND DRILL OUT W/ AIR ROTARY TO T.D.

1230 LUNCH - DRILLERS CAN'T GET CONCRETE FOR COMPL.!

1300 TRY & CONTACT DRILLING SUP & OP TECH CONTRACTING. CONC. TOMM. @ 0900

1500 SITE CLEANUP.

1530 R.C. & I A REMEASURE UST SITE No. 1 FOR RELOCATED BORINGS (SEE FIG on PAGE _____).

1600 RC & IA RECON UST SITE

1650 OP TECH OFF BASE.

1708 ARRIVE BACK @ HOTEL

NO FURTHER ENTRIES
8-14-95 R.C.

AUGUST 15, 1995

0650 DEBARK HOTEL

0653 ARRIVE @ DENNY'S FOR BKFST MEET. SINCE DRILLERS HAD DELAY IN OBTAINING CEMENT, WE HAVE SET BACK 1 FULL DAY IN SAMPLING!

0735 DEBARK DENNY'S.

0830 LOOK FOR DRILLERS & CHECK SITES.

0910 DRILLERS ONSITE W/ CEMENT TRUCK, POUR PADS FOR 591-001MW, 651-002MW, AND 873-001MW.

0945 CEMENT TRUCK TO DECON TO WASH DOWN SHOOT.

1000 CEMENT TRUCK OFFSITE. 320 MAXIM GUY STILL NOT ON BASE.

1020 CALLED OPTECH CONTRACTING. NINMA IS TOO BUSY TO TALK.

1030 CALLED ALLEN IRWIN & FRANK LENTZ @ COMSTOCK-DAVIS TO CONFIRM 1400 MEETING W/ SURVEYOR @ BASE. ALLEN TO METER ME @ GUARD SHACK @ 1400.

1050 MAXIM DEVELOPMENT TEAM ONSITE (ALEX CLINN)

1100. TAKE LUNCH OPTECH & MAXIM

1140 MOVE TO [illegible]

AUGUST 15, 1994

1145 RIG UP TO DEVELOP 591-001MW.

1200 CUT DRILLERS LOOSE TO OFFICE PENDING AUTHORIZATION TO DRILL DEEP WELL.

1205 OPEN WELL 591-001MW PID = 0
DEPTH TO WATER = WELL DEPTH = BLS

1212 DECON PUMP (2" SS GRUNDI REDIFLOW W/ TEFLON COVERED HOSE).

1222 BEGIN BAILING LS CLAY SILT FROM WELL BOTTOM BAIL = 1 GALLON, MOSTLY MUD/CLAY ON BAILER END, RIG UP FOR PUMPING.

1300 WELL STOPS PUMPING @ 9 GAL, WL IN WELL @ 19.1' BLS. PULL PUMP.

1305 PUMP [illegible] DECISION, RIG W/ PUMP.

August 15, 1995

1345

1400 Arrive @ UST Site No 4 to develop 651-00mw2.

1405 R.C. off to meet Allen Irwin of Comstock - Davis Surveyors. Tour all sites and physically show Allen where Boring and monitor well locations. Introduced him to Dave Tomlagen w/ Base CIVE.

1508 Comstock - Davis off Base - Give him keys to monitor wells.

1520 Call ~~Iris~~ Norma w/ Contracting John - Morris to Negociate Tomorrow morning for Drilling well. Martin off-Base

1600 Back @ GC Room. Call Dave Gentile. Fill him in on Contracting.

~~1610 Call Dave~~ R.C.

1615 Off Base

1645 Back @ Hotel

8-15-95 R.C.

No further entries

August 16, 1995

0550 Debark Hotel

0555 Arrive @ Denny's for Brkfst meet.

0635 Debark for Base

0650 Arrive @ Base.

0735 R.C. & J.W. to UST Site No. To take measurements on cultural features.

0814 Finish measurements (Page)

0820 Call from Norma - Sal is re-adjusting quote for extra 2 samples but no word from ANGRC Contracting.

0830 Take measurements on cultural features @ UST Site No. 2.

0958 Finish measurements on No. 2 Take Coke Break!

0915 Take measurements on UST Site No. 4. (Page ___).

0955 Finish Meas. on Site No. 4. Return to GC Room to make calls to Contracting. Norma on other line.

1020 Try Again - No go.

1025 J.B. & I.A. off to sample Well 873-001mw & 801-001mw.

August 16, 1995

R.C. @ 1045 Called Norman Contracting. No Authorization - John will visit Catia (Angoc) today and talk w/ her this afternoon. Called Dave Groutage - no authorization not given this afternoon he has to utilize rig on other job, and will not be able to drill until next week.

1100 Visit Flightline site. J.B. & IA. Sample

1105 R.C. & IA Take lunch.

1135 Finish lunch.

+2 1155 Arrive @ UST Site No. 2 & set up to sample 873-001 mw - a few rain drops.

1212 Begin Purging well (0.64 Gal / well vol.) WL = 6.64 BTOC, well depth = 10.89' = 4.25' of water

3 well vol. = 2.07 Gal.

1214	1 Gal	17.7°C,	6.73 pH,	754 mmho
1217	2 Gal	17.3°C,	7.01,	738
1220	3 Gal	17.1°,	7.04,	741
1222	4 Gal	17.0,	6.97,	741 Total

of 4 Gal. Purged

1235 Collect Sample for VOCs 8240,

August 16, 1995

1235 TPH - DRO (WDNR).

1245 Collect Field Blank 873-GW-FB

1255 Offsite To Decon.

1308 Open well 591-001mw PID = 0

WL = 16.37

1310 Begin Purging J.B on Bailer.

1320	5 Gal.	12.2°C,	7.12 pH,	600
1328	10 Gal	11.7°,	7.16 pH,	588
1342	15 Gal	12.2°,	7.26,	583
1347	20 Gal	12.4°,	7.29,	578
1353	25 Gal.	12.2°,	7.32,	577
1355	26 Gal	12.2°,	7.33,	565

1400 WL = 16.61, PID = 0 BKGD = 0

1405 Collect Sample 591-001mw for VOCs (8240) & TPH - DRO (WDNR mod.) No QA/QC samples

1415 Complete COCs & Pack samples in Coolers. Fedex Airbill 6896121304.

1445 Call OPTECH - Norma unavailable

1500 Off Base for Hotel.

1520 Arrive @ Hotel.

No Further Entries
8-16-95 R.C.

R.C.

August 16, 1995

0550 DeBark For Denny's
0655 Arrive @ Denny's (Toast + O.J.)
0635 DeBark For Base.
0650 Arrive @ Base. Prep For Sampling
0726 Safety meeting. I.A., J.B., R.C., J.W.
0736 Take WL in 591-001mw WL = 16.56'
PID = 0ppm.
0740 Contact Mike Kubatz: Told Him Authorization not Recieved Yesterday so Rig Co. Requested Release to Pursue other Job on Thursday – Friday, Rig Booked Solid For Next week. Proposed Option - Drill well in 2 weeks During Sampling (2nd Round) And Have Duluth Crew Perform 2nd Round Sampling on that one well. Option B would be Have Contractor Sample well Accord To Optech Protocol. Double-Checked Rig Avail. – No Go!
0810 Visit Decon site, Drillers Cleaning up For Exit of Base.

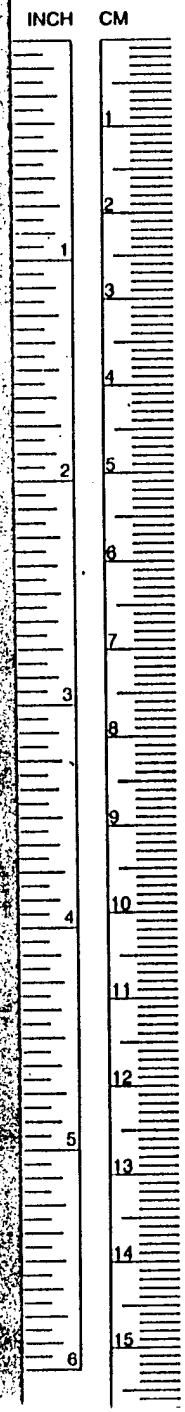
August 16, 1995

0830 Maxim on site w/ well Place Equipment set up on well 651-002mw. ~~WL~~ R.C.
0847 WL = 10.25 PID = 2.1 ppm
well Depth = 25.0' BTOC. = 14.75'
of water Column = 9.62 Gal/w Vol.
X 3 = 28.86 Gallons For 3 well Vol.
0915 Sub. Pump Decon'd & Set in To well @ mid way through water column. = 18' BTOC.
0923 Begin Purging 651-002mw
0924
0930
0936
0943
0946
0952
0954
0955 J.W. & Maxim Rig to Place Mw-4
1015 Collect 651-001mw VOC's (8240) TPH-Gro & Dro (w/DNR) Total Lead. WL = 10.29' BTOC Sample w/ Teflon Bailer.
1105 Collect Equipt. Blnk 651-003EB

1105 Cont. For VOCs, TPH Gro-Dro, Total Pb
1129 Move To MW-4 J.W. still Purging.
1125*
1127*
1133
1137
1141
1145
1149
1149 Stop Purging - Pull out Pump & Begin Decon.
1200 WL in MW-4 = 14.62' PID = 0
Collect Sample MW-4. For VOCs (8240) TPH (Gro+Dro) (NJDNR mod) & Total Lead (SW 6010).
1230 Ready To Purge 651-001MWA
1232 WL in 651-001MWA = 2.94' BTOC Well Bottom = 13.10' BTOC, Water Column = 1.66 GAL. X 3 = 4.98 Gall min Purge.
1245 R.C. & I.A. To Lunch - J.W. To Bail.
1300 R.C. Back From Lunch.
1315 Collect 651-001MWA

651-003Dup VOCs (8240), TPH (Gro+Dro) (NJDNR mod) & Total Lead 6010.
1330 Break Down Sampling Stations & Secure Wells.
1400 Return To GC Room To Pack & Prep Samples For Shipment Air Bills 539759230 3 & 539759231 4.
1450 Pack Equipment & Supplies
1630 Leave Base (R.C., J.W., IA) For FedEx To mail Samples & Supplies
1650 Arrive @ FedEx Shipping To Hazco II E, (SPL Samples), SPL (Empty Chests)
1720 Debark FedEx For Hotel.

No Entries 4-17-95 R.C.



MEASUREMENT CONVERSIONS

IF YOU KNOW	MULTIPLY BY	TO FIND
LENGTH		
inches	2.540	centimeters
feet	30.480	centimeters
yards	0.914	meters
miles	1.609	kilometers
millimeters	0.039	inches
centimeters	0.393	inches
meters	3.280	feet
meters	1.093	yards
kilometers	0.621	miles
WEIGHT		
ounces	28.350	grams
pounds	0.453	kilograms
grams	0.035	ounces
kilograms	2.204	pounds
VOLUME		
fluid ounces	29.573	milliliters
pints	0.473	liters
quarts	0.946	liters
gallons (U.S.)	3.785	liters
milliliters	0.033	fluid ounces
liters	1.056	quarts
liters	0.264	gallons (U.S.)
TEMPERATURE		
°C = (°F - 32) x .555		
°F = (°C x 1.8) + 32		

Inches	Decimals of foot	Millimeters
1/16	.0052	1.5875
1/8	.0104	3.1750
3/16	.0156	4.7625
1/4	.0208	6.3500
5/16	.0260	7.9350
3/8	.0313	9.5250
1/2	.0417	12.700
5/8	.0521	15.875
3/4	.0625	19.050
7/8	.0729	22.225
1"	.0833	25.400
2"	.1667	50.800
3"	.2500	76.200
4"	.3333	101.60
5"	.4167	127.00
6"	.5000	152.40
7"	.5833	177.80
8"	.6667	203.20
9"	.7500	228.60
10"	.8333	254.00
11"	.9167	279.40
1 foot	1.0000	304.80

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	In-Situ 1-800-446-7488	
	ENVIROTech 1-800-468-8921	
	# 15ZZ70	
	DAVE Groutage (612) 645-3601	
	Mike Kubatz (301) 836-8762	
	Linda BAKER/KAREN Saterfield	
	1-800-969-6775	
	(713) 724-8841 (mobile)	

Best Western
8151 Bridge Rd.
Bloomington, MN 55437
(612) 830-1300

UPS
Bernadette (5932)

ENVT P.O.#: 6451
EIS P.O.#: 6462 / 8137 → pH-Temp-cond
50 ft. sleeves
CAL GAS.

Specific Conductance : ± 10 mmhos
pH : ± 0.1 unit
Temp : ± 0.5°C

12100 HAZCO Return ~~ft~~

Earl (508) 759-6989 (off.)
Hana Water Test

Sunday
29 July 95

Travel day

1700 Leave home
2345 CST hotel

23.8
17.0
6.8

8.9
8.0
10.9
1.1
9.8

6.8

Day 1

(1)

Monday 31 July 1995

0700 → 0800 Breakfast Meeting
0800 Pack car
0808 Leave hotel
0830 On base
Meet w/ Capt Hubert
0908 Meet w/ ~~DAVE~~ about utility location
1015 Goto Van Rental
1140 Done at Van Rental
Lunch (0.3)
1200 Head back to base
1 Get RC + SW. Take them to hotel due to rain (0.8)
1353 On Base
Gather equipment
Take inventory
1605 Leave Base. Goto store
Set supplies
1738 At hotel. Decon Brass cleaned caps.
1854 Done

9.8 HRS

Tuesday 1 August 1995

0610 Team hotel
0625 On Base. Get Gate passes
0630 Breakfast (0.5)
0700 Safty Mtg.
0715 Goto stokage Bldg.
Arrange stuff for day
Help I.A. learn about daily prep
0900 Begin GC. setup. Serial #: 139

Gain	1,000
Carrier Gas Flow	12 ml/min
Injection Vol	100 ml
GC Oven Temp	40° C
Analysis time	450 sec
Window	± 10 %

[redacted]

1019 Prepare 100 ppb, 1 ppm, and 10 ppm BTEX standards.
1145 lunch (0.4)
1205 Continue GC room set-up. It is a very tight fit

1224 100 PPB BTEX STANDARD
Good Run. Set Library
1240 1 PPM BTEX STANDARD
Good Run. Set Library
1254 10 PPM BTEX STANDARD
Good Run. Set Library
1308 AIR BLANK

● Benzene	21 ppb
● Toluene	61 ppb
● E-Benzene	148 ppb
● M,P-Xylene	314 ppb
● O-Xylene	197 ppb

1321 Potable Water

● Benzene	23 ppb
● Toluene	13 ppb
● E-Benzene	58 ppb
● M,P-Xylene	98 ppb
● O-Xylene	6 ppb

1333 Goto Site to get samples
1350 Prepare Sample
1356 651-001 BH 0.5-2.0 14g

● Toluene	6 ppb
● E-Benzene	4 ppb

1408 Go to Site to get samples

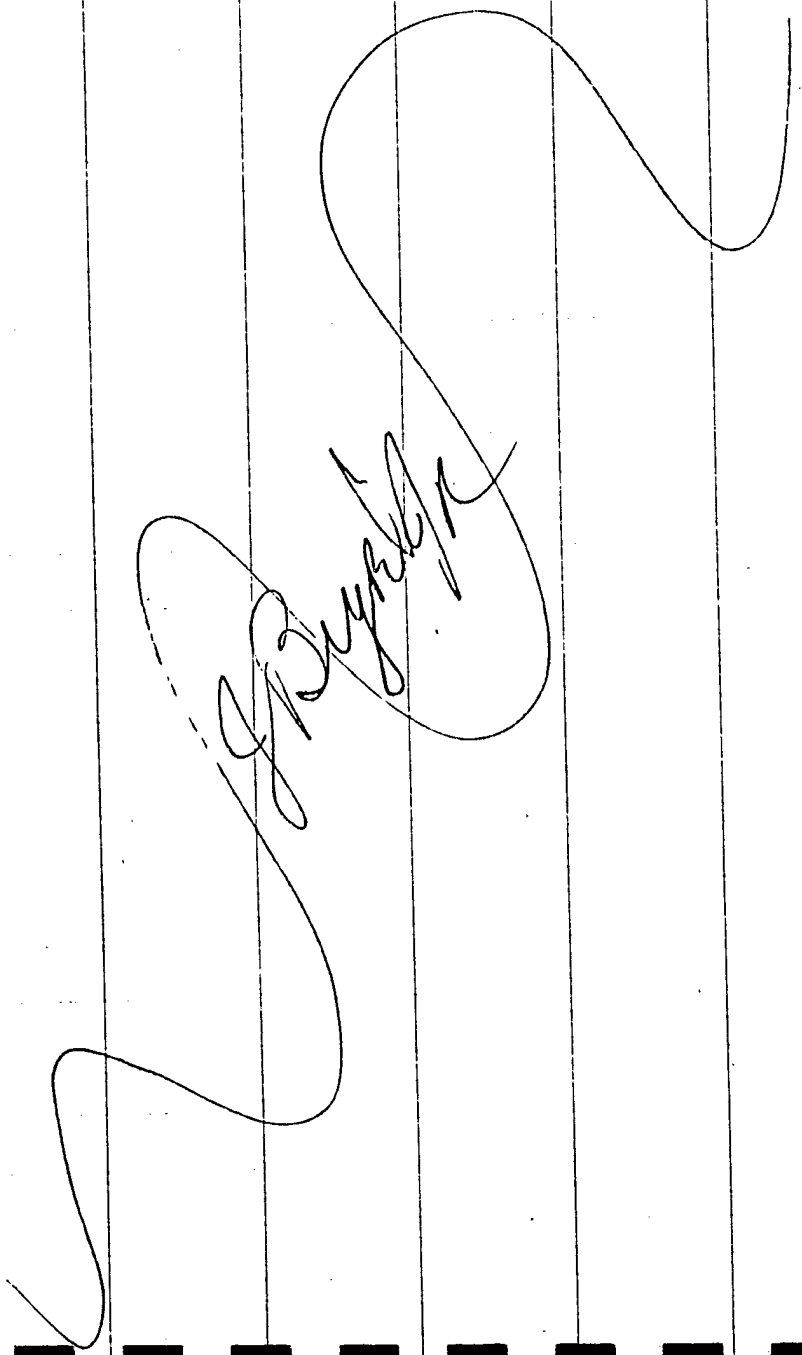
1422	651-001BH	3.5-5.0		20g
	• Toluene		2 ppb	
	• E-Benzene		2 ppb	
1433	651-001BH	8.5-10.0		17g
	• Toluene		1 ppb	
1444	Goto Site to get samples.			
1459	Prepare Samples			
1502	651-002BH	0-1.5		14g
	• Benzene		1 ppb	
	• Toluene		1 ppb	
	• E-Benzene		6 ppb	
	• M,P-Xylene		58 ppb	
1517	100 PPB BTEX STD			CAL
	Benzene	107	ppb	100 ppb
	Toluene	100	ppb	100 ppb
	E-Benzene	86	ppb	100 ppb
	M,P-Xylene	170	ppb	200 ppb
	O-Xylene	59	ppb	100 ppb
1530	AIR BLANK			
	• Benzene		8 ppb	
1541	Potable Water			
	• Toluene		1 ppb	

** Water came from same source as previous PW sample

1553	651-002BH	3.5'-5.0'		20g
	• Benzene		1 ppb	
	• Toluene		1 ppb	
	• E-Benzene		3 ppb	
	• MP-Xylene		28 ppb	
1603	651-002BH	8.5'-10.0'		23g
	• Toluene		1 ppb	
1613	100 PPB BTEX STD			
	• Benzene		104 ppb	
	• Toluene		96 ppb	
	• E-Benzene		81 ppb	
	• MP-Xylene		145 ppb	
	• O-Xylene			
1625	Shut down GC.			
	Goto Site			
	Pack up Van			
	Pack ice chest for FEDEX			
1741	Leave base			
	Done at FEDEX. Head to			
	TARGET			
1640	at hotel			

16.7
6.2
6.5

9.6 hrs



Wednesday August 2, 1995

0653 Leave hotel
Breakfast (0.7)
0700 On Base
Prep Van for day
0720 Go to Site 561. Set-up
decon Area.
0755 On Site
0756 Go to hotel to get rest of
ice chests.
0851 BACK on Base
0900 Goto GC Room & begin GC
set up. Build 100 ppb, 1 ppm,
and 10 ppm BTEX STDs.
GAIN 1,000
CARRIER GAS FLOW 125 ~~100~~ 33 ml/min
Injection Vol. 100 µl
GC OVEN Temp 40°C
~~44~~ ANALYSIS Time 460 ~~440~~ 33 sec
WINDOW ± 10%
0950 100 PPB BTEX STD.
Good Run. Set LIBRARY
1007 1 PPM BTEX STD.
Good Run. Set Library

1022 10 PPM BTEX
Good Run. Set Library
1038 AIR BLANK
- Benzene 16 ppb
- Toluene 71 ppb
- E-Benzene 148 ppb
- MP-Xylene 314 ppb
- O-Xylene 159 ppb

* Used a different syringe than the syringe used for the standard shots.

1052 Goto Site 651 for samples
1105 Return & Prep Samples
1105 AIR BLANK
- All NDs

1119 651-003BH 0.0'-2.0' 14g
- Toluene 1 ppb

1129 651-003BH 3.5'-5.0' 14g
- Toluene 1 ppb

1140 651-003BH 8.5'-10.0' 17g
- Benzene 10 ppb
- Toluene 14 ppb
- E-Benzene 5 ppb

1150 652-004BH 0.0'-1.5' 17g

- M,P-Xylene 6 ppb

1200 652-004BH 3.5'-5.0' 17g
- Toluene 1 ppb

1211 100 PPB BTEX STD | CAL

Benzene	86 ppb	100 ppb
Toluene	61 ppb	100 ppb
E-Benzene	59 ppb	100 ppb
MP-Xylene	108 ppb	200 ppb
O-Xylene	28 ppb	100 ppb

1224 AIR BLANK
- ALL NDS

1234 652-004BH 8.5'-10.0' 17g
- Toluene 104 ppb
- E-Benzene 1 ppb

1244 652-005BH 0.0'-1.5' 17g
- Toluene 1 ppb

1254 652-005BH 3.5'-5.0' 14g
- Toluene 313 ppb

1305 Goto Site to get samples And get lunch. (0,3)
1335 CALL SPL to check that samples had ARRIVED. Yes. OK.
1340 CALL ENVIROTECH & check on end-caps and Teflon Tape

(10)

Delivered at 9:45 and Heason signed for it.

1351 Go to shipping & Receiving

1430 Found box of stuff from envirotech

~~1435~~ 1445 100 PPB BTEX STD

Benzene	95	ppb	ppb
Toluene	96	ppb	ppb
E-Benzene	96	ppb	ppb
MP-xylene	192	ppb	ppb
O-xylene	93	ppb	ppb

1455 AIR BLANK

- All NDs

1505 652-005 BH 8.5'-10.0' 17g

- Toluene 740 ppb
- E-Benzene 7 ppb

1521 652-005 BH 13.5'-15.0' 20g

- Benzene 5 ppb
- Toluene 114 ppb

1532 652-006 BH 0.0'-1.5' 17g

- Toluene 2 ppb

1543 Go to Site to get samples.

1555 Prepare Samples

1558 652-006 BH 3.5'-5.0' 20g

(11)

- Toluene 2 ppb

~~065~~ SB

1608 652-006 BH 8.5'-10.0' 14g

- All NDs

1618 100 PPB BTEX CAL

Benzene	87	ppb	100 ppb
Toluene	75	ppb	100 ppb
E-Benzene	63	ppb	100 ppb
MP-xylene	110	ppb	200 ppb
O-xylene	54	ppb	100 ppb

1632 AIR BLANK

- All NDs

1642 652-006 BH 13.5'-15.0' 17g

- ALL NDs

1655 Shut down GC. Service & Maintenance off all parts. Pack ice chest.

1756 Leave Base

1818 At hotel

7
18.8
6.6
19.4

11.4 hrs

THURSDAY 3 August

0545 Leave hotel
Breakfast (0.5) Get ICE.
0654 On Base
Begin GC setup.
0733 Go to Site to setup
0800 Drillers on site
0808 Safety Meeting
- Rain & Slipping
- Air Monitoring
- Tornado warning system

0815 Aide w/ Rensate BLANK collection
0830 Return to GC to continue GC set up.

GAIN	1,000
CARRIER GAS FLOW	14 µl/min
INJ. Volume	100 µl
GC OVEN Temp	40°C
ANALYSIS TIME	400 sec
WINDOW	±10%

0840 Build 10 PPM, 1 PPM, 100 PPB BTEX STDs

J Brandt

0901 100 PPB BTEX STD
Good Run. Set LIBRARY
0915 1 PPM BTEX STD
Good Run. Set LIBRARY
0930 10 PPM BTEX STD
Good Run. Set LIBRARY
0944 AIR BLANK

• Benzene	30 ppb
• Toluene	129 ppb
• E-Benzene	217 ppb
• MP-xylene	469 ppb
• O-xylene	265 ppb

0954 AIR BLANK

• Benzene	2 ppb
• Toluene	24 ppb
• E-Benzene	119 ppb
• MP-xylene	248 ppb
• O-xylene	106 ppb

1005 Go to Site to get samples
Prep. Samples
1017 AIR BLANK

• Benzene	6 ppb
• Toluene	2 ppb
• E-Benzene	24 ppb

J Brandt

3 Aug 95

	• MP-Xylene		43 ppb
1029	652-007BH	1.0'-2.0'	14g
	• Toluene		2,720 ppb
	• E-Benzene		413 ppb
	• MP-Xylene		12 ppb
	• O-Xylene		17 ppb
1042	652-007 BH	2.5'-3.5'	17g
	• Toluene		9,770 ppb
	• E-Benzene		579 ppb
	• MP-Xylene		1,270 ppb
	• O-Xylene		4,000 ppb
1052	652-007 BH	4.0'-5.0'	17g 50µl inject
	• Toluene		26,120 ppb
	• E-Benzene		956 ppb
	• MP-Xylene		2,330 ppb
	• O-Xylene		4,900 ppb
1102	652-007 BH	9.0'-10.0'	20g 50µl inject
	• Toluene		945 ppb
	• E-Benzene		29 ppb
	• MP-Xylene		46 ppb
1113	652-007 BH	14.0'-15.0'	20g
	• Toluene		194 ppb
	• E-Benzene		32 ppb
	• MP-Xylene		38 ppb

1123	10 PPM BTEX STD			CAL	
	Benzene	10,800	ppb	10,000	ppb
	Toluene	9,390	ppb	10,000	ppb
	E-Benzene	7,360	ppb	10,000	ppb
	MP-Xylene	15,000	ppb	20,000	ppb
	O-Xylene	6,150	ppb	10,000	ppb
1137	AIR BLANK				
	• Benzene	6 ppb			
	• Toluene	163 ppb			
	• E-Benzene	288 ppb			
	• MP-Xylene	609 ppb			
	• O-Xylene	298 ppb			
1146	652-007 BH	Reshot			
	---- 2.5'-3.5'	17g	10µl injection		
	• Toluene	438 ppb			
	• E-Benzene	72 ppb			
	• MP-Xylene	100 ppb			
1157	652-007 BH	Re-shot			
	---- 4.0'-5.0'	17g	10µl injection		
	• Toluene	3,940 ppb			
	• E-Benzene	58 ppb			
	• MP-Xylene	66 ppb			

J Burdette

1210 652-007 BH Reshot
---- 9.0'-10.0' 20g 10µl injection
- Benzene 3 ppb
- Toluene 141 ppb
- E-Benzene 23 ppb
- MP-Xylene 74 ppb

1221 Goto Site.
Lunch (0.4)
Back at Site

1254 Goto Shipping & Receiving & Pickup Methanol. Run it back to Site.

1300 Back at GC.
Prepare samples.

1308

1 PPM BTEX STD			CAL	
Benzene	921	ppb	1,000	ppb
Toluene	841	ppb	1,000	ppb
E-Benzene	654	ppb	1,000	ppb
MP-Xylene	1,310	ppb	2,000	ppb
O-Xylene	548	ppb	1,000	ppb

1320 AIR BLANK
- Benzene 6 ppb
- Toluene 34 ppb
- E-Benzene 25 ppb

- MP-Xylene 35 ppb

1331 651-001MW 0.5'-1.5' 17g
- Toluene 13 ppb
- E-Benzene 18 ppb
- MP-Xylene 25 ppb

1341 651-001MW 4.0'-5.0' 17g
- Benzene 1 ppb
- Toluene 19 ppb
- E-Benzene 9 ppb
- MP-Xylene 13 ppb

1353 651-001MW 9.0'-10.0' 14g
- Toluene 6 ppb
- E-Benzene 2 ppb

1405 Goto Site
Get samples. Return & Prep. samples.

1425 651-001MWA 0.5'-1.5' 14g
- Toluene 5 ppb

1434 651-001MWA 4.0'-5.0' 20g
- Toluene 4 ppb

(18)

					CAL	
1445	100 PPB BTEX					
	Benzene	95	ppb			ppb
	Toluene	76	ppb			ppb
	E-Benzene	48	ppb	JBgy		ppb
	MP-XYLene	69	ppb			ppb
	O-XYLene	ND	ppb			ppb
	AIR BLANK	JBgy				
		JByd Jr				
1456	Goto Site. Get last sample					
	Prep Sample					
1515	100 PPB BTEX				CAL	
	Benzene	100	ppb		100	ppb
	Toluene	77	ppb		100	ppb
	E-Benzene	48	ppb		100	ppb
	MP-XYLene	76	ppb		200	ppb
	O-XYLene	22	ppb		100	ppb
1526	AIR BLANK					
	● Toluene		6 ppb			
	● E-Benzene		3 ppb			
1535	651-001MWA	9.0'-10.0'		20g		
	● Toluene		3 ppb			
	Shut down and service GC.					
1550	Goto Site. Help pack					
	Return to GC room					

(19)

Prep samples for FEDEX

1705 Leave Base

1730 At hotel

17.5

~~12.1~~

16.6

5.8

10.8

10.8

JBydJr

(20)

FRIDAY 4 August 95

0548 Leave hotel
Breakfast. (0.6)
0653 On Base
Prep Van for day.
0730 Goto Site 651. Set up.
0810 Drillers arrive.
0820 Safety Mtg.
0830 START drilling
0900 Severe storm. High Wind
Break down site - Evac to
Contract Club
1100 Lunch (0.4)
1125 Goto GC Bldg & Begin
set up. Build 10 PPM, 1 PPM,
and 100 PPB BTEX STDs.
GAIN 1,000
Carrier GAS Flow 14.0 ml/min
Injection Vol 100 µl
GC Oven Temp 40°C
Analysis Time 420 sec
Window ± 10%
1158 100 PPB BTEX STD
Weak Run

(21)

1216 100 PPB BTEX STD
Weak Run. Clean GC and
Rebuild all standards.
1245 100 PPB BTEX STD
No O-Xylene. Adjust DRV 344
settings
1301 100 PPB BTEX STD
Good Run. Set LIBRARY
1317 1 PPM BTEX STD
Good Run. Set LIBRARY
1331 10 PPM BTEX STD
Good Run. Set Library
1344 AIR BLANK
- Benzene 32 ppb
- Toluene 151 ppb
- E-Benzene 349 ppb
- MP-Xylene 1547 ppb
- O-Xylene 663 ppb

1400 651-001MWA 14.0'-15.0' 14g
- Benzene 47 ppb
- Toluene 32 ppb
- E-Benzene 188 ppb
- MP-Xylene 792 ppb
- O-Xylene 396 ppb

Breaks

4 Aug 95

1413 Goto Site. Not drilling.
Setting pipe on MWA-001.
Return to GC Room

1439 AIR BLANK

- Benzene 1 ppb
- Toluene 3 ppb
- E-Benzene 49 ppb
- MP-Xylene 194 ppb
- O-Xylene 91 ppb

1450 651-001MWA RESHOT 14.0-15.0 14g

- Benzene 6 ppb
- Toluene 2 ppb
- E-Benzene 29 ppb
- MP-Xylene 111 ppb
- O-Xylene 54 ppb

1504 1 PPM BTEX STD

- Benzene 977 ppb
- Toluene 876 ppb
- E-Benzene 888 ppb
- MP-Xylene 1,790 ppb
- O-Xylene 891 ppb

1577 Shut down GC.
1520 Goto Site, Raining
Ready to Shut down

4 Aug 95

Return to GC Room & shut down
Bldg.
1543 Leave base
1620 At hotel

16.3
15.3
5.8
9.5

4 Bytes/ft

9.5 hr

(24)

Day 6 Saturday

0545 Leave hotel
Breakfast (0,6)

0650 On Base
Begin GC set-up.
Build 10 PPM, 1 PPM and
100 PPB BTEX STDs

0743 100 PPB BTEX STD
•• Good Run. Set Library
--- GAIN 1,000
Carrier Gas Flow 14 ml/min
Injection Vol 100 µl
GC Oven Temp 40°C
Analysis Time 420 sec
Window ±10%

0800 1 PPM BTEX
•• MISSED SHOT

0808 1 PPM BTEX
•• GC NOT Registering. Seems
like column is clogged.

0818 1 PPM BTEX
•• Good Run. Set Library

0831 10 PPM BTEX
•• Good Run. Set Library

(25)

0843	AIR BLANK	
	• Benzene	97 ppb
	• Toluene	355 ppb
	• E-Benzene	426 ppb
	• MP-Xylene	1,670 ppb
	• O-Xylene	708 ppb
0855	AIR BLANK	
	• Benzene	21 ppb
	• Toluene	101 ppb
	• E-Benzene	263 ppb
	• MP-Xylene	990 ppb
	• O-Xylene	471 ppb
0906	AIR BLANK	
	• Benzene	20 ppb
	• Toluene	34 ppb
	• E-Benzene	182 ppb
	• MP-Xylene	659 ppb
	• O-Xylene	297 ppb

0918	1 PPM BTEX STD			cal
	Benzene	909	ppb	ppb
	Toluene	925	ppb	ppb
	E-Benzene	993	ppb	ppb
	MP-Xylene	2,180	ppb	ppb
	O-Xylene	1,050	ppb	ppb

0932 AIR BLANK
- Benzene 22 ppb
- Toluene 40 ppb
- E-Benzene 137 ppb
- MP-Xylene 439 ppb
- O-Xylene 204 ppb

0945 Goto Site
Get samples. Prepare Samples

1002 651-002MW 2.0'-3.0' 20g
- Benzene 1 ppb
- Toluene 4 ppb
- E-Benzene 52 ppb
- MP-Xylene 184 ppb
- O-Xylene 90 ppb

1013 651-002MW 4.0'-5.0' 14g
- Toluene 4 ppb
- E-Benzene 119 ppb
- MP-Xylene 10 ppb
- O-Xylene 123 ppb

1028 651-002MW 9.0'-10.0' 17g
- Toluene 2 ppb
- E-Benzene 18 ppb
- MP-Xylene 51 ppb
- O-Xylene 34 ppb

1039 651-002MW 14.0'-15.0' 20g
- Benzene 12 ppb
- Toluene 2 ppb
- E-Benzene 11 ppb
- MP-Xylene 23 ppb
- ~~gbgdgk~~

1049 AIR BLANK
- Benzene 4 ppb
- E-Benzene 2 ppb

1102 SHUT DOWN GC.
Help IA unload van
→ There are high readings where there should not be.
Turn oven on to 58°C,
gas flow set at 14.0 ml/min.
Will return later to turn off machine.

1134 IA & I leave base. Go to store to get supplies for next week.

1300 At Hotel

17.0
- 6.3
= 6.7

6.7 hrs

(28)

SUNDAY

6 AUGUST 95

0800 Goto Base to check on GC. I let it COOK overnite AT 58°C And 14 ul/min to see if This helps clear-up Readings I have been having ON Air BLANKS

J Burdr

DAY 8

(29)

MONDAY 7 AUGUST 95

0547 Leave Hotel

BREAKFAST (0,6) Get Ice

0700 ON BASE

0701 Goto Shipping & Receiving to check on stuff.

New CANISTER of CAL-GAS & hose (AIR) FOR GC Are here

0725 ALL PREPRINTED LABELS got wet overnite. Help RC make new ones.

0740 Open new BTEX Ampule

[redacted]

0750 Build 10 PPM, 1 PPM, and 100 PPB BTEX STDs

GAIN	1,000
CARRIER GAS FLOW	14 ul/min
INJECTION VOL	100 ul
GC OVEN Temp	40°C
ANALYSIS Time	420 sec
WINDOW	±10%

7 Aug 95

0820 100 PPB BTEX STD
•• Good Run. Set LIBRARY
0834 1 PPM BTEX STD
•• Good Run. Set LIBRARY
0848 10 PPM BTEX STD
•• Good Run. Set LIBRARY.
0904 AIR BLANK
- Benzene 68 ppb
- Toluene 273 ppb
- E-Benzene 407 ppb
- M,P-Xylene 865 ppb
- O-Xylene 498 ppb

0918 DRY RUN
- Benzene 1 ppb
- Toluene 19 ppb
- E-Benzene 145 ppb
- MP-Xylene 274 ppb
- O-Xylene 45 ppb

Call M. Alexander. Confirm about high air BLANK readings
0935 Call EIS. Ron Reynor.
Set GC to Auto Run for about 4-5 hours to clean itself out.

7 Aug 95

0948 Monitor GC for a couple of 600 sec Auto Runs to see how it does.
1013 Goto Size
1120 TAKE Field BLANK
591-001 FB
1130 Goto GC to check status. It is still showing peaks, they are smaller than they were earlier.
1157 TAKE Rinsate BLANK
591-001 EB.
1215 Lunch (0.5)
1250 Goto GC room. Check on STATUS of GC. Looks to have cleaned-up
1318 AIR BLANK
- ALL ND's

1331 100 PPB BTEX STD
•• Good Run. Set LIBRARY
1345 1 PPM BTEX STD
•• Good Run. Set LIBRARY
1400 10 PPM BTEX STD
•• Good Run. Set Library.

1412	AIR BLANK		
	• Benzene	103	ppb
	• Toluene	427	ppb
	• E-Benzene	681	ppb
	• MP-Xylene	1,350	ppb
	• O-Xylene	699	ppb
1428	AIR BLANK		
	• Benzene	15	ppb
	• Toluene	122	ppb
	• E-Benzene	315	ppb
	• MP-Xylene	675	ppb
	• O-Xylene	288	ppb
1439	AIR BLANK		
	• Benzene	33	ppb
	• Toluene	61	ppb
	• E-Benzene	205	ppb
	• MP-Xylene	446	ppb
	• O-Xylene	162	ppb
1452	AIR BLANK		
	• Benzene	18	ppb
	• Toluene	14	ppb
	• E-Benzene	149	ppb
	• MP-Xylene	325	ppb
	• O-Xylene	129	ppb

1503	AIR BLANK		
	• Benzene	15	ppb
	• Toluene	8	ppb
	• E-Benzene	121	ppb
	• MP-Xylene	251	ppb
	• O-Xylene	113	ppb
1513	AIR BLANK (CARRIER GAS)		
	• Benzene	8	ppb
	• Toluene	5	ppb
	• E-Benzene	100	ppb
	• MP-Xylene	207	ppb
	• O-Xylene	102	ppb

1525 CALL EIS. Request Another GC for pick up tomorrow AM at FEDEX.

1600 Go to FEDEX.

1615 Done at FEDEX. Get ICE

1635 Back on Base
Help break down Site
Help pack ice chest w/ samples

1740 Leave Base

1805 At Hotel

7
18.1
6.9
11

11.2 HRS

(39)

DAY 9

Tuesday 8 August 95

0546 Leave hotel
Break fast (0.5)
Get ICE.
0656 On Base
Decon VOA VIALS
0854 Goto FEDEX to get new GC.
0912 Leave FEDEX
0925 Back on Base.
GC Serial #: 138
Set up GC and Build 10 PPM, 1 PPM, 100 PPB BTEX STDs
1006 100 PPB BTEX STD
•• NO O-XYlene
GAIN 1,000
CARRIER GAS Flow 14.0 ml/min
Injection VoL 100 µl
GC OVEN Temp ~~400~~ 40°C
Analysis Time 400 sec
Window ± 10%
1022 100 PPB BTEX
•• Good Run. Set library

8 Aug 95

(35)

1036	1 PPM BTEX STD		
	•• Good Run. Set LIBRARY		
1050	10 PPM BTEX STD		
	•• Good Run. Set LIBRARY		
1106	AIR BLANK		
	● Benzene		1 ppb
	● Toluene		2 ppb
	● E-Benzene		5 ppb
	● MP-XYlene		4 ppb
1116	591-001BH	2.0'-3.0'	17g
	● Benzene		1 ppb
	● Toluene		3 ppb
	● E-Benzene		6 ppb
	● MP-XYlene		10 ppb
	● O-XYlene		5 ppb
1126	591-001BH	4.0'-5.0'	20g
	● Benzene		2 ppb
	● Toluene		1 ppb
1136	591-001BH	9.0'-10.0'	14g
	● Benzene		1 ppb
	● Toluene		1 ppb
1154			
~~1145~~	591-001BH	13.5'-14.5'	20g
	● Benzene		1 ppb
	● Toluene		1 ppb

	● E-Benzene		1 ppb	
1204	591-001BH	16.5'-17.5'		17g
	● Benzene		2ppb	
	● E-Benzene		1ppb	
1215	lunch (0.4)			
	Goto Site.			
1157	100 PPB BTEX STD		CAL	
	Benzene	75 ppb	100	ppb
	Toluene	59 ppb	100	ppb
	E-Benzene	56 ppb	100	ppb
	MP-Xylene	104 ppb	200	ppb
	O-Xylene	78 ppb	67	ppb
1312	100 PPB BTEX STD			
	Benzene	103 ppb	100	ppb
	Toluene	102 ppb	100	ppb
	E-Benzene	101 ppb	100	ppb
	MP-Xylene	206 ppb	200	ppb
	O-Xylene	69 ppb	100	ppb
1324	AIR BLANK			
	● Benzene	2 ppb		
1334	591-004BH	0.5'-1.5'		14g
	● Benzene	2 ppb		
1344	591-004BH	4.0'-5.0'		20g
	● Benzene	2ppb		

	● Toluene	1 ppb	
1356	591-004BH	9.0'-10.0'	11g
	● Benzene	2 ppb	
1405	591-004BH	13.5'-14.5'	17g
	● Benzene	2 ppb	
1415	591-004BH	15.5'-16.5'	14g
	● Benzene	11 ppb	
	● E-Benzene	2 ppb	
1425	100 PPB BTEX STD	CAL	
	Benzene	102 ppb	ppb
	Toluene	91 ppb	ppb
	E-Benzene	101 ppb	ppb
	MP-Xylene	202 ppb	ppb
	O-Xylene	100 ppb	ppb
1435	AIR BLANK		
	● Benzene	2ppb	
1445	591-004BH	18.5'-19.0'	37g
	● Benzene	60 ppb	
	● Toluene	24 ppb	
1455	591-002BH	0.5'-1.5'	14g
	● ALL NDs		
1505	591-002BH	4.0'-5.0'	17g
	● Benzene	2ppb	

J Byrd AE

1514 591-002BH 9.0'-10.0' 17g
- Benzene 2 ppb

1524 591-002BH 13.5'-14.0' 17g
- Benzene 3 ppb
- E-Benzene 2 ppb

1534 100 PPB BTEX

			CAL	
Benzene	100	ppb	100	ppb
Toluene	83	ppb	100	ppb
E-Benzene	87	ppb	100	ppb
MP-Xylene	153	ppb	200	ppb
O-Xylene	87	ppb	99	ppb

1546 AIR BLANK
- Benzene 3 ppb

1556 591-003BH 0.5'-1.5' 17g
- Benzene 3 ppb

1605 591-003BH 4.0'-5.0' 20g
- Benzene 3 ppb

1615 591-003BH 9.0'-10.0' 17g
- Benzene 3 ppb
- E-Benzene 2 ppb

1625 591-003BH 14.0'-15.0' 20g
- Benzene 4 ppb

1635 873-001BH 1.5'-2.5' 17g
- Benzene 3 ppb

- E-Benzene 2 ppb

1645 100 PPB BTEX

Benzene	94	ppb
Toluene	89	ppb
E-Benzene	79	ppb
MP-Xylene	188	ppb
O-Xylene	102	ppb

1654 AIR BLANK
- Benzene 4 ppb
- E-Benzene 3 ppb

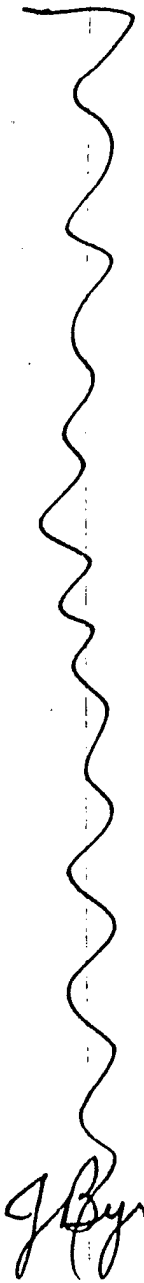
1704 873-001BH 4.0'-5.0' 14g
- Benzene 3 ppb
- E-Benzene 4 ppb

1714 873-001BH 9.0'-10.0' 17g
- Benzene 3 ppb
- E-Benzene 4 ppb

100 PPB BTEX
- Benzene 1 ppb
- Toluene 79 ppb
- E-Benzene 63 ppb
- MP-Xylene 116 ppb
- O-Xylene 51 ppb

Shut down GC
Secure BLDG.

1731 Leave Base
1811 At Hotel



5.8
.9
6 7

7 1
18.2
6.7
11.5

J Byrdsr

11.5 LBS

Wednesday 9 August 95

0542
0642 Leave hotel
Breakfast (0.5)
0640 Get ICE
0657 ON BASE
Prep Van for day.
0712 BASE CARPENTRY is here to install new windows in my GC Room. Will be able to operate except when they cut through sheetrock. I will stop and cover all equipment with plastic.
0727 Set up GC. Build 10 PPM, 1 PPM, and 100 PPB BTEX STDs.

GAIN	1,000
CARRIER GAS FLOW	14 ml/min
INJECTION Vol	100 µl
GC OVEN Temp	40°C
ANALYSIS TIME	400 sec
WINDOW	±10%

0754 100 PPB BTEX STD
•• NO E-B, MP-X, or O-X peaks

JByrdsr

4 Aug 45

0807 100 PPB BTEX STD
•• Good Run. Set LIBRARY
0823 1 PPM BTEX STD
•• Good Run. Set LIBRARY
0836 10 PPM BTEX STD
•• Good Run. Set LIBRARY
0850 AIR BLANK
- Benzene 7 ppb
- Toluene 9 ppb
- E-Benzene 25 ppb
- MP-XYLene 44 ppb
- O-XYLene 32 ppb

0900 AIR BLANK
- Benzene 2 ppb
- E-Benzene 2 ppb
- MP-XYLene 3 ppb

0910 R.T.'s have drifted. Reset airflow to 14 ml/min.
0941 100 PPB BTEX STD
•• MISSED SHOT
0949 100 PPB BTEX STD
•• Good Run. Set Library
1004 1 PPM BTEX STD
•• Good Run. Set Library

4 Aug 45

1016 10 PPM BTEX STD
•• Good Run. Set LIBRARY
1029 AIR BLANK
- Benzene 5 ppb
- Toluene 8 ppb
- E-Benzene 19 ppb
- MP-XYLene 35 ppb
- O-XYLene 13 ppb

1039 591-001 MW 2.0'-3.0' 20g
- Benzene 6 ppb
- Toluene 3 ppb
- E-Benzene 7 ppb
- MP-XYLene 27 ppb

1052 591-001 MW 4.0'-5.0' 17g
- Benzene 1 ppb
- Toluene 1 ppb

1108 591-001 MW 9.0'-10.0' 20g
- Benzene 1 ppb
- Toluene 1 ppb

1117 591-001 MW 14.0'-15.0' 17g
- Benzene 2 ppb
- Toluene 1 ppb
- E-Benzene 2 ppb

4 Aug 95

0807	100 PPB BTEX STD	
	•• Good Run. Set LIBRARY	
0823	1 PPM BTEX STD	
	•• Good Run. Set LIBRARY	
0836	10 PPM BTEX STD	
	•• Good Run. Set LIBRARY	
0850	AIR BLANK	
	• Benzene	7 ppb
	• Toluene	9 ppb
	• E-Benzene	25 ppb
	• MP-Xylene	44 ppb
	• O-Xylene	32 ppb
0900	AIR BLANK	
	• Benzene	2 ppb
	• E-Benzene	2 ppb
	• MP-Xylene	3 ppb
0910	R.T.'s have drifted. Reset airflow to 14 ml/min.	
0941	100 PPB BTEX STD	
	•• MISSED SHOT	
0949	100 PPB BTEX STD	
	•• Good Run. Set Library	
1004	1 PPM BTEX STD	
	•• Good Run. Set Library	

4 Aug 95

1016	10 PPM BTEX STD		
	•• Good Run. Set Library		
1029	AIR BLANK		
	• Benzene		5 ppb
	• Toluene		8 ppb
	• E-Benzene		19 ppb
	• MP-Xylene		35 ppb
	• O-Xylene		13 ppb
1039	591-001MW	2.0'-3.0'	20g
	• Benzene		6 ppb
	• Toluene		3 ppb
	• E-Benzene		7 ppb
	• MP-Xylene		27 ppb
1052	591-001MW	4.0'-5.0'	17g
	• Benzene		1 ppb
	• Toluene		1 ppb
1108	591-001MW	9.0'-10.0'	20g
	• Benzene		1 ppb
	• Toluene		1 ppb
1117	591-001MW	14.0'-15.0'	17g
	• Benzene		2 ppb
	• Toluene		1 ppb
	• E-Benzene		2 ppb

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1127	100 PPB BTEX STD			CAL	
	Benzene	95	ppb	100	ppb
	Toluene	91	ppb	100	ppb
	E-Benzene	74	ppb	100	ppb
	MP-Xylene	134	ppb	200	ppb
	O-Xylene	39	ppb	100	ppb
1140	AIR BLANK				
	• ALL NDs				
1150	873-002BH	1.5'-2.5'		17g	
	• Benzene	2	ppb		
	• Toluene	1	ppb		
	• E-Benzene	1	ppb		
1200	873-002BH	4.0'-5.0'		17g	
	• ALL NDs				
1210	873-002BH	9.0'-10.0'		23g	
	• ALL NDs				
1219	873-003BH	1.5'-2.5'		20g	
	• ALL NDs				
1229	873-003BH	4.0'-5.0'		17g	
	• Benzene	22	ppb		

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1239	100 PPB BTEX		CAL	
	Benzene	30 ppb		ppb
	Toluene	— ppb		ppb
	E-Benzene	— ppb		ppb
	MP-Xylene	— ppb		ppb
	O-Xylene	— ppb		ppb
1248	100 PPB BTEX			
	Benzene	24 ppb		ppb
	Toluene	ppb		ppb
	E-Benzene	ppb		ppb
	MP-Xylene	ppb		ppb
	O-Xylene	ppb		ppb

.... Standard is flat

1259 lunch (0.3)

1316 At Site 801. RC wants me to call J. Morris And ask About cost of IMW into Bedrock.

1323 Call J. Morris. He is not in.

1326 Take labels out to Site 801

1331 Back at GC.
Clean GC and Restart-up
Build new 10 ppM, 1 PPM, and 100 PPB BTEX STDs

1336 No I was WRONG. The column is clogged.

1340 ~~CALL EI 495. JB~~ Call J. MORRIS He is NOT in.

1345 CALL EI IES. Get info about how to unclog INJECTION PORT.

1416 Done working on GC. Re-PROGRAM GC. Will use STANDARDS from this MORNING

1442 100 PPB BTEX
•• Good Run. Set LIBRARY.

GAIN	1,000
CARRIER GAS Flow	14 ml/min
Injection Vol	100 µl
GC OVEN Temp	40°C
ANALYSIS TIME	400 sec
Window	± 10%

1456 1 PPM BTEX
•• Good Run. Set LIBRARY

1509 10 PPM BTEX
•• Good Run. Set LIBRARY

1521 AIR BLANK
- BENZENE 4 ppb
- TOLUENE 6 ppb

- E-BENZENE 14 ppb
- MP-XYLENE 29 ppb
- O-XYLENE 11 ppb

1531 873-002BH RESHOT 4.0'-5.0' 17g
- BENZENE 3 ppb
- TOLUENE 4 ppb
- E-BENZENE 11 ppb
- MP-XYLENE 21 ppb
- O-XYLENE 23 ppb

1541 873-002BH Reshot 9.0'-10.0' 23g
- BENZENE 2 ppb

1551 873-003BH Reshot 1.5'-2.5' 20g
- BENZENE 1 ppb

1601 873-003BH Reshot 4.0'-5.0' 17g
- BENZENE 1 ppb

1611 873-003BH 9.0'-10.0' 26g
- BENZENE 1 ppb

1620 100 PPB BTEX

			CAL	
BENZENE	95	ppb	100	ppb
TOLUENE	82	ppb	100	ppb
E-BENZENE	67	ppb	100	ppb
MP-XYLENE	139	ppb	200	ppb
O-XYLENE	75	ppb	100	ppb

J Bunker

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1633 AIR BLANK
- Benzene 1 ppb

1656 801-002BH 1.5'-2.5' 17g
- Benzene 1 ppb
- E-Benzene 3 ppb
- MP-xylene 48 ppb
- O-xylene 9 ppb

1706 801-002BH 4.0'-5.0' 14g
- Benzene 1 ppb

1716 801-002BH 9.0'-10.0' 17g
- Benzene 1 ppb

1726 801-001BH 1.5'-2.5' 17g
- Benzene 1 ppb

1735 801-001BH 4.0'-5.0' 17g
- Benzene 1 ppb

1745 100 PPB BTEX

		CAL
Benzene	95 ppb	100 ppb
Toluene	84 ppb	100 ppb
E-Benzene	75 ppb	100 ppb
MP-xylene	151 ppb	200 ppb
O-xylene	78 ppb	100 ppb

1756 AIR BLANK
- Benzene 1 ppb

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1806 801-001BH 9.0'-10.0' 11g
- ALL NDs

1817 801-001BH 9.0'-10.0' 11g ResHOT
--- 50 µl injection
- ALL NDs

SHUT DOWN GC
Secure Building
1835 Leave BASE
1905 at hotel

8
19.1
6.5
12.6

5.7
.8
6.5

12.6 hrs

(50)

THURSDAY 10 AUGUST 95

0545 Leave hotel
Breakfast (0.5)
Get ICE
0655 On Base
Set up GC
Build 10 PPM, 1PPM, and 100 PPB BTEX STDs
0757 100 PPB BTEX STD
•• Good Run. Set LIBRARY
0811 1 PPM BTEX STD
•• Good Run. Set LIBRARY
0824 10 PPM BTEX STD
•• MISSED SHOT
0835 10 PPM BTEX STD
•• Good Run. Set LIBRARY
0848 AIR BLANK
- Benzene 2 ppb
- Toluene 9 ppb
- E-Benzene 31 ppb
- MP-Xylene 238 ppb
- O-Xylene 117 ppb

0858 AIR BLANK
- ~~Benzene~~ Toluene 2 ppb

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- E-Benzene 8 ppb
- MP-Xylene 157 ppb
- O-Xylene 76 ppb

0908 801-001BH Re-Re-Shot 9.0'-10.0' 11g
- ALL NDs

0919 AIR BLANK 200µl injection
- Toluene 1 ppb
- E-Benzene 2 ppb
- MP-Xylene 88 ppb
- O-Xylene 49 ppb

0939 801-003BH 1.5'-2.5' 14g
- Toluene 1 ppb
- E-Benzene 2 ppb
- MP-Xylene 92 ppb
- O-Xylene 52 ppb

0949 801-003BH 4.0'-5.0' 14g
- Benzene 1 ppb
- MP-Xylene 66 ppb
- O-Xylene 35 ppb

0959 801-003BH 9.0'-10.0' 20g
- Benzene 1 ppb
- MP-Xylene 51 ppb
- O-Xylene 28 ppb

1010 Let GC Autocycle to see if that cleans out MP-XYLene and O-Xylene peaks.

100 PPB BTEX STD			CAL	
Benzene	96	ppb	100	ppb
Toluene	84	ppb	100	ppb
E-Benzene	78	ppb	100	ppb
MP-Xylene	188	ppb	200	ppb
O-Xylene	101	ppb	100	ppb

1102 AIR BLANK
- MP-Xylene 20 ppb
- O-Xylene 12 ppb

1112 801-003BH Reshot 1.5'-2.5' 14g
- Benzene 1 ppb
- MP-Xylene 26 ppb
- O-Xylene 15 ppb

1122 801-003BH Reshot 4.0'-5.0' 14g
- ●●● 150 µl injection
- Benzene 1 ppb
- MP-Xylene 26 ppb
- O-Xylene 15 ppb

1132 801-003BH Reshot 9.0'-10.0' ~20g
- Benzene 1 ppb
- MP-Xylene 19 ppb

- O-Xylene 10 ppb

1143 Go to Site 801

1152 Prepare samples.

1200 801-001MW 2.0'-3.0' 20g
- Benzene 1 ppb
- MP-Xylene 16 ppb
- O-Xylene 10 ppb

1209 801-001MW 4.0'-5.0' 23g
- Benzene 1 ppb
- MP-Xylene 15 ppb
- O-Xylene 9 ppb

1219

100 PPB BTEX			CAL	
Benzene	100	ppb	100	ppb
Toluene	88	ppb	100	ppb
E-Benzene	79	ppb	100	ppb
MP-Xylene	140	ppb	200	ppb
O-Xylene	72	ppb	100	ppb

1232 AIR BLANK
- Benzene 1 ppb
- MP-Xylene 9 ppb
- O-Xylene 7 ppb

1241 801-001MW 9.0'-10.0' 26g
- Benzene 3 ppb
- MP-Xylene 53 ppb

	● O-XYLENE 33ppb
	Lunch (0.3)
1310	Goto Site 801 they are done sampling today.
1320	Return to GC Room & shut it down.
1333	Return to Site 801 They aren't there.
1341	Back at GC room Prep samples for FEDEX.
1508	Goto FEDEX
1524	At FEDEX
1531	Done at FEDEX
1545	Back on Base Policing Sites.
1711	Leave Base
1741	At hotel

17.7
6.5
11.2

11.2 hrs

FRIDAY 11 AUGUST 95

0545	Leave hotel	
	Breakfast (0.5)	
	Get ICE	
0656	On Base	
	Set up GC. Build 10 PPM, 1 PPM, and 100 PPB BTEX STANDARDS	
	GAIN	1,000
	CARRIER GAS FLOW	14 ml/min
	INJECTION VOL	100 µl
	GC OVEN TEMP	40°C
	ANALYSIS TIME	400 sec
	WINDOW	±10%
0752	100 PPB BTEX	
	•• MISSED SHOT	
0800	100 PPB BTEX STD	
	•• Good Run. Set Library	
0814	1 PPM BTEX	
	•• Good Run. Set Library	
	---- Hold off. Severe T-storms IN AREA.	
0853	10 PPM BTEX	
	•• Good Run. Set Library.	

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0919	AIR BLANK	
	• Benzene	3 ppb
	• Toluene	8 ppb
	• E-Benzene	24 ppb
	• MP-Xylene	135 ppb
	• O-Xylene	71 ppb
0930	AIR BLANK	250 µl injection
	• Toluene	1 ppb
	• E-Benzene	1 ppb
	• MP-Xylene	59 ppb
	• O-Xylene	33 ppb
0940	AIR BLANK	
	• Toluene	1 ppb
	• MP-Xylene	33 ppb
	• O-Xylene	17 ppb
0950	AIR BLANK	
	• MP-Xylene	19 ppb
	• O-Xylene	10 ppb
1000	AIR BLANK	
	• MP-Xylene	15 ppb
	• O-Xylene	9 ppb
1010	AIR BLANK	
	• MP-Xylene	12 ppb
	• O-Xylene	6 ppb

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				CAL	
1021	100 PPB BTEX				
	Benzene	100	ppb	100	ppb
	Toluene	87	ppb	100	ppb
	E-Benzene	85	ppb	100	ppb
	MP-Xylene	184	ppb	200	ppb
	O-Xylene	94	ppb	100	ppb
1033	AIR BLANK				
	• Benzene		1 ppb		
	• MP-Xylene		8 ppb		
	• O-Xylene		5 ppb		
1045	Goto Site to get samples				
	Prepare Samples				
1103	873-001 MW 2.0'-3.0'			14 g	
	• Benzene		1 ppb		
	• Toluene		1 ppb		
	• MP-Xylene		6 ppb		
1113	873-001 MW 4.0'-5.0'			14 g	
	• MP-Xylene		6 ppb		
1123	873-001 MW 9.0'-10.0'			17 g	
	• Benzene		3 ppb		
	• MP-Xylene		8 ppb		
	• O-Xylene		5 ppb		

J Byrdsong

1151	100 PPB BTEX	
	• Benzene	92 ppb
	• Toluene	85 ppb
	• E-Benzene	81 ppb
	• MP-Xylene	143 ppb
	• O-Xylene	74 ppb
1202	SHUT DOWN GC. They ARE DONE SAMPLING.	
1205	lunch (0.4)	
1228	At Site	
	Need to PROGRAM GC AGAIN.	
	Return to GC. Reprogram.	
	WILL use standards from this A.M.	
	GAIN	1,000
	CARRIER GAS FLOW	14 ml/min
	Injection VOL	100 µl
	GC Oven Temp	40°C
	Analysis Time	400 sec
	Window	± 10%
1250	100 PPB BTEX	
	•• Good Run. Set Library	
1304	1 PPM BTEX	
	•• Good Run. Set Library	

1318	10 PPM BTEX	
	•• Good Run. Set Library.	
1330	AIR BLANK	
	• Benzene	3 ppb
	• Toluene	13 ppb
	• E-Benzene	44 ppb
	• MP-Xylene	236 ppb
	• O-Xylene	113 ppb
1340	AIR BLANK	
	--- 300 µl injection	
	• Benzene	3 ppb
	• Toluene	6 ppb
	• E-Benzene	16 ppb
	• MP-Xylene	218 ppb
	• O-Xylene	104 ppb
1351	AIR BLANK	
	--- 300 µl injection	
	• Toluene	1 ppb
	• MP-Xylene	128 ppb
	• O-Xylene	53 ppb
1401	AIR BLANK	
	• Benzene	1 ppb
	• MP-Xylene	62 ppb
	• O-Xylene	26 ppb

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1418 AIR BLANK
- Benzene 1 ppb
- MP-Xylene 31 ppb
- O-Xylene 14 ppb

1428 AIR BLANK
- Benzene 1 ppb
- MP-Xylene 23 ppb
- O-Xylene 12 ppb

1440 Got Site. Drillers had to go get right drill bit On Standby waiting for drillers

1610 100 PPB BTEX

		CAL
Benzene	79 ppb	100 ppb
Toluene	65 ppb	100 ppb
E-Benzene	49 ppb	100 ppb
MP-Xylene	130 ppb	200 ppb
O-Xylene	76 ppb	100 ppb

1622 AIR BLANK
- Toluene 4 ppb
- MP-Xylene 28 ppb
- O-Xylene 12 ppb

1632 651-002MW 15.0' 17g
- Benzene 3 ppb

- Toluene 16 ppb
- E-Benzene 3 ppb
- MP-Xylene 21 ppb
- O-Xylene 12 ppb

Go to Site, Meet IA. She is bringing me dirt.

1644 PREP Samples.

1649 651-002MW 17.0' 23g
- Toluene 11 ppb
- MP-Xylene 27 ppb

1659 651-002MW 20.0' 23g
- Benzene 1 ppb
- MP-Xylene 22 ppb
- O-Xylene 11 ppb

1709 651-002MW 22.0' 14g
- Benzene 41 ppb
- Toluene 176 ppb
- E-Benzene 49 ppb
- MP-Xylene 270 ppb
- O-Xylene 49 ppb

1724 1 PPM BTEX
- Benzene 873 ppb
- Toluene 760 ppb

- E-Benzene 675 ppb
- MP-Xylene 1,330 ppb
- O-Xylene 710 ppb

1735 SHUT DOWN GC.
Secure Building
1745 Leave Base
1818 At Hotel

7.1
18.3
6.6
11.7

5.7
.9
6.6

11.7 hrs

SATURDAY 12 AUGUST

0630 Leave hotel
BREAKFAST. (0.5)
0727 On Base
Set up for well development.
CALIBRATE Hydac #9310
~~Hydac #~~ gP
~~to~~ the 2 Hydac's we own do not work.
RC, JW, IA go to start well development.
0854 CAN't do anything w/ Hydacs
0855 Go to Site
Developing well
0908 Thunderstorm hits.
0926 Ready to continue development
1002 Rain Delay
CALL it a day. High lightning threat.
UNLOAD VAN.
1042 Leave Base
1100 At Hotel

11.0
7.0
18.0

4.0 hr

DAY 15

MONDAY 14 AUGUST 1995

0545 Leave hotel
BREAKFAST (0.5)
0650 ON BASE
Calibrate Hydac
Prepare for Development of MW3.
0731 Goto FLight Line to Develope 801-001MW
0918 Leave FLight Line.
0930 Goto GC Room. Decon equipment. Call. M. ESCOBAR. have him order Filters for Lead sampling.
0953 Goto Site to Develope next well
1047 Leave Site 873
BREif RC about Well. Goto GC Bldg. to Decon equipment.
1120 Lunch (0.5)
1150 Go get water Level indicator & decon.
1220 Goto Site 65J

Set-up & Develope Well
1322 Leave Site 65J
Goto B242. Brief RC on status. They are done drilling. Goto GC Bldg & Begin GC Set-up. Build 10 PPM, 1 PPM, and 100 PPB BTEX STDs.

GAIN	1,000
CARRIER GAS Flow	14 ml/min
Injection Vol	100 µl
GC OVEN Temp	40°C
ANALYSIS Time	400 sec
Window	±10%

1427 100 PPB BTEX
•• Good Run. Set LIBRARY

[redacted]

1442-1 PPM BTEX
•• Good Run. Set LIBRARY
1456 10 PPM BTEX
•• Good Run. Set LIBRARY.

1511 AIR BLANK
- Benzene 6 ppb
- Toluene 9 ppb
- E-Benzene 24 ppb
- MP-Xylene 54 ppb
- O-Xylene 35 ppb

1521 AIR BLANK
- Benzene 3 ppb
- Toluene 1 ppb
- E-Benzene 4 ppb

1533 591-001MW 18.0'-20.0' 14g
- Benzene 5 ppb
- Toluene 4 ppb
- E-Benzene 9 ppb
- MP-Xylene 18 ppb
- O-Xylene 13 ppb

1543 591-001MW 22.0'-24.0' 17g
- Benzene 2 ppb
- Toluene 2 ppb
- E-Benzene 1 ppb

591-001MW 20.0'-22.0' 23g
- ** GC FREEZES up. I will rerun samples tomorrow

1625 Prepare HYDAC for return to HAZCO. Secure Bldg.
1650 Leave BASE. Go to FEDEX.
1705 Done at FEDEX
1724 At Hotel

6
17.4
5.7
11.7
10.7

10.7 hrs

J. Rundell

DAY 16

Tuesday 15 AUG 95

0645 Leave hotel
Breakfast (0.5)
0757 On Base
Prepare for MW sampling
--Since we only have 1 HYDAC & 1 water level meter, they (RC, JW) will use them to develope wells.
0822 Begin GC set-up.
Build 10 PPM, 1 PPM, 100 PPB BTEX STDs
0850 Goto FEDEX to get stuff
0900 @ Pick-up HYDAC
0915 On Base.
Calibrate Hydac to 7.0→10.0 pH.
0935 Take Hydac to RC.
Return to GC to Continue Set-up.

GAIN	1,000
CARRIER GAS FLOW	14 ml/min
Injection Vol	100 ul

	GC OVEN Temp	40°C
	Analysis Time	400 sec
	Window	± 10%
0954	100 PPB BTEX	
	•• Good Run. Set LIBRARY	
1010	1 PPM BTEX	
	•• Good Run. Set LIBRARY	
1024	10 PPM BTEX	
	•• Good Run. Set LIBRARY	
1038	AIR BLANK	
	● Benzene	6 ppb
	● Toluene	10 ppb
	● E-Benzene	28 ppb
	● MP-Xylene	64 ppb
	● O-Xylene	33 ppb
1048	AIR BLANK	
	● Benzene	1 ppb
	● Toluene	5 ppb
	● E-Benzene	5 ppb
	● MP-XYLENE	6 ppb
1058	AIR BLANK	
	● Toluene	4 ppb
	● E-Benzene	1 ppb

1108	591-001MW	18.0'-20.0'	14g
	● Benzene	7 ppb	
	● Toluene	3 ppb	
	● E-Benzene	5 ppb	
	● MP-Xylene	9 ppb	
	● O-Xylene	6 ppb	
1118	591-001MW	20.0'-22.0'	23g
	● Benzene	1 ppb	
	● Toluene	2 ppb	
1128	591-001MW	22.0'-24.0'	17g
	● Benzene	1 ppb	
	● Toluene	3 ppb	
	● E-Benzene	1 ppb	
1138	100 PPB BTEX		CAL
	Benzene	104 ppb	ppb
	Toluene	100 ppb	ppb
	E-Benzene	97 ppb	ppb
	MP-Xylene	193 ppb	ppb
	O-Xylene	97 ppb	ppb
1148	AIR BLANK		
	● ALL NDs		
1158	591-001MW	26.0'-28.0	20g
	● Toluene	1 ppb	

1208	591-001MW	28.0'-30.0'	11g
	● Toluene	1 ppb	
	● E-Benzene	2 ppb	
	● O-Xylene	8 ppb	
1218	100 PPB BTEX		
	- Benzene	105 ppb	
	- Toluene	91 ppb	
	- E-Benzene	87 ppb	
	- MP-Xylene	161 ppb	
	- O-Xylene	85 ppb	
1230	Goto Site to see how RC, JW, IA ARE doing		
1250	Lunch (0.4)		
1316	On Site as well is developed		
1345	pH on HyDAC goes haywire.		
1400	CALL HAZCO. CAROL (254)		
1410	Call EIS. SAM. P.O.# 8137		
1420	Call OPTech		
1430	CALL EIS. Order new pH-Temp-Conductivity meter.		
1440	Goto site to continue development. Will be without pH meter		

15 Aug 95

1448 Begin Development of 651-001MW

1535 Break down development equipment.

1545 Goto GC room to shut down GC. Pack HYDAC for shipment back to HAZCO

1604

1640 Leave Base

1622 Done w/ FEDEX. Filters are here.

1641 Out Hotel

16.7
7.6
9.1

.4
.5
.9
6.7
7.6

9 1/2 hr

Rec'd

WEDNESDAY 16 Aug 95

0545 Leave hotel
Breakfast (0.5)

0650 On Base. Prepare for sampling.

0815 CALL OPTECH to see if Timesheets got there. They ARE O.K.

0824 Goto FEDEX. Get GAS.

0855 Done w/ FEDEX. Goto Home Depot for Bubble □.
Done

0948 ON BASE
Set-up & LEARN YSI-3500 pH-Temp-Cond. meter.
CALIBRATE pH to 7.0 → 10.0

1010 Goto 801-000MW to purge & Sample

1125 Done Sampling & Collecting samples 801-001MW, 801-001MW MS/MSD.

1130 Goto GC Bldg & decon equipment.

1141 Lunch (0.4)

1204 At Site 873
Purging & Sampling
1235 TAKE Sample 873-001MW
1245 Take Sample 873-GW-FB.
1255 Go Decon equipment
1305 At Site 591
1410 Done Sampling
591-001 MW
1415 Goto GC Bldg. and prepare
ice chest & samples
for shipment to
SPL.
1500 LEAVE BASE
1520 At Hotel

$$\begin{array}{r} 15.3 \\ 5.7 \\ \hline 21.0 \\ -.9 \\ \hline 8.7 \end{array}$$

8.7 hrs

THURSDAY 17 AUG 95

0545 Leave hotel
BREAKFAST (0.5)
0650 On BASE
Prepare for Sampling
PREPARE BOTTLE LABELS
0750 CALIBRATE YSI-3500
to 7.0 → 4.0 pH and
1,000 us/cm Conductivity.
0800 Goto B. 610 (shipping & receiving)
to find out about shipping
out equipment. (John Blake)
they close at 1500 on
FRIDAY.
0833 CALL Air Products. They will
pickup Air Bottle Tomorrow
0836 CALL Burlington Air Express
to schedule pickup of
equipment for Tomorrow
0900 Set-up GC. Build 10 PPM,
1 ppM, and 100 PPB BTEX
STANDARDS.
GAIN 1,000
CARRIER GAS FLOW 14 ml/min

17 Aug 95

	INJECTION VOL	100µl
	GC OVEN TEMP	40°C
	ANALYSIS TIME	400 sec
	WINDOW	±10%
0931	100 PPB BTEX	
	•• GOOD RUN. SET	LIBRARY
0945	1 PPM BTEX	
	•• GOOD RUN. SET	LIBRARY.
0959	10 PPM BTEX	
	•• GOOD RUN. SET	LIBRARY
1015	AIR BLANK	
	• BENZENE	15 ppb
	• TOLUENE	12 ppb
	• E-BENZENE	32 ppb
	• MP-XYLENE	68 ppb
	• O-XYLENE	38 ppb
1024	AIR BLANK	
	• BENZENE	3 ppb
	• TOLUENE	1 ppb
	• E-BENZENE	1 ppb
1034	591-001MW	WATER 10 ml
	• BENZENE	3 ppb
1044	801-001MW	WATER 10 ml
	• BENZENE	3 ppb.

17 Aug 95

1054	873-001MW	WATER	10 ml
	• BENZENE	3 ppb	
	• TOLUENE	1 ppb	
1104	651-002MW	WATER	10 ml
	• BENZENE	6 ppb	
	• TOLUENE	28 ppb	
	• E-BENZENE	2 ppb	
	• MP-XYLENE	187 ppb	
1115	GOTO SITE 651		
1120	GO GET MORE LINE FOR BAILER		
1155	BACK ON BASE		
	LUNCH (0.2)		
1221	GET SAMPLE AND GO TO B. 614.		
1235	CALL VAN RENTAL AND SET UP PICK-UP OF VAN FOR TOMORROW AT 1000.		
1236	100 PPB BTEX		CAL
	BENZENE	96 ppb	100 ppb
	TOLUENE	74 ppb	100 ppb
	E-BENZENE	74 ppb	100 ppb
	MP-XYLENE	155 ppb	200 ppb
	O-XYLENE	84 ppb	100 ppb

17 Aug 95

1248 AIR BLANK
- Benzene 2 ppb

1258 MW-4 - BAR Eng water 10 ml
- Benzene 184 ppb
- Toluene 5,910 ppb
- E-Benzene 258 ppb
- MP-Xylene 2,250 ppb
- O-Xylene 2,620 ppb

1312 MW-4 Reshot water 10 ml
---- 10 µl injection
- Benzene 21 ppb
- Toluene 521 ppb
- E-Benzene 51 ppb
- MP-Xylene 257 ppb
- O-Xylene 154 ppb

1325 Goto Site to get sample

1335 651-001MWA water 10 ml
- Benzene 1 ppb
- Toluene 5 ppb
- E-Benzene 3 ppb

1347 1 PPM BTEX
- Benzene 960 ppb
- Toluene 865 ppb
- E-Benzene 764 ppb

17 Aug 95

- MP-Xylene 1,470 ppb
- O-Xylene 763 ppb

SHUT Down GC
Break down all equipment
Pack for shipment back to SA.

1645 Secure B614
I am locked in compound area. Call Security-
Secure B614

1702 Leave base

1725 At Hotel

17.4
6.4
11.0

5.7
.7
6.4

11.0 hr

Byrd/JR

DAY 14

FRIDAY 18 Aug 95

0700 Leave hotel
0715 On base
— Check that pallets & air bottle have been moved to B.610 (S&R) for shipping
— Check sites one last time for trash
— Meet w/ Capt Hubert. Debrief
— Turn Key to B614 in to Terry.
— Leave Base
0830 At Hotel (1.5)
~~J Byod Jr~~ 7.3 / B.B
1000 Check out
1015 Turn over van to Pick-up crew
1030 Leave hotel
1717 Home

8.8 hrs

SUNDAY

17 September 1995

TRAVEL DAY

1100 Leave home
↓
1800 At Hotel

J Byod Jr

7.0 hrs

18 September 1995

0545 Load VAN. Leave hotel
Breakfast (0.5)
0650 On BASE
Load equipment into storeroom
-- Orange box is not here yet.
0720 Go check in w/ Capt Haberl
He is not in yet.
Show RA AROUND BASE
Return to B614. Sort
thru stuff that is here
WAITING FOR drillers.
0740 CALL BAX. Orange box will
be here this A.M
0926 Drillers on site
Set up Decon AREA (drlrs)
and steam clean drilling
equipment & CASING
1020 Move to 651-00 MW B two
drill well
1025 Safety mtg. JB, RA, drillers
1030 CALIBRATE PID -100 ppm ISOBUT
LEL - %

DRILLING

1100 Goto B614 and prep sample
bottles.
1200 Lunch (0.5)
1230 Continue decon of
equipment & prep for
sampling Tomorrow.
1400 Goto TARGET to get
supplies
- Weed eater string
- Foil
1500 On Base. DRLRS setting &
cementing CASING.
1600 Done on site Goto B614
to close-up. Secure B614
1612 Leave Base
1644 At Hotel

16.7
6.7
10

10 Hrs

TUESDAY

19 September 1995

0600 Leave hotel
Breakfast (0.5)

0700 On base
Calibrate PID, YSI 3500, LEL.

0800 Goto Site 873 to Purge & sample 873-001 MW

0835 Sample 873-001 MW

0845 Sample 873-MS/MSD

0857 Goto B614 & Decon equipment

0917 at 801-001 M to sample/Purge

1000 Sample 801-FB

1010 Sample 801-001 MW

1022 Goto B614 to decon

1042 at 591-001 MW to purge and Sample

1140 Sample 591-EB

1150 Sample 591-001 MW

1155 Done at 591-001 MW

1200 lunch (0.5)

1230 Prepare C-O-Cs And ice chests for shipment

1320 Leave BASE. Goto FEDEX to

ship 2 ice chests to SPL

1343 Done at FEDEX. Goto Hotel to get ice chests and Hermit stuff.

1416 Back on Base. Drillers on site.

1430 Goto B614 to check decont & Prep sample kits

1516 at Site. They are Air hammer drilling

1800 Secure B614 & Lock gate

Drlrs are doing surface completion And installing flush mount

1922 Drillers have cleaned & packed all equipment. Leave site.

1926 Leave site & BASE. Stop at WALMART for string

2000 At hotel

13.0 hr

20 September 1995

0640 Leave hotel
0705 On Base
Prepare VAN for slug Testing.
0734 Go get key to MW-4 from Capt. Hubert.
0741 at 651-001MWB to take WATER Level
0749 Set up at 591-001 mw to slug Test.
WATER Level - 16.36' BTOC
0830 CALL HAZCO. Discuss PRINTER Problems ALLEN #282
SERIAL#: 11221
0850 STILL working. They will Replace it.
1000 CALL K. Saterfield @ SPL to check on ice chests. They were received. Need to CALL back & check that there was NO BREAKAGE.
1030 CALL SPL. Samples Recieved in good order

1057 Done slug Testing 591-001 MW
Go to B614 to Decon equip
1115 Set up on 873-001MW
— Water Level 7.65 BTOC
1222 Done SLUG TESTING.
1225 Lunch (C, G)
1309 Decon equipment
1318 at 801-001 MW for slug Test.
WATER Level - 6.34' BTOC
1411 Done w/ SLUG Test
Go Decon equipment
CALL HAZCO. They will down-load data from Hermit & send it to us.
★ RA#: 12743
1450 At 651-002 MW to Slug Test.
1530 Done, Go Decon equip.
1548 At 651-001MWA to Slug Test
1709 Done. Decon equipment
1723 At MW-4 to Slug Test
1803 Done @ MW-4. Go DECON.
1818 Secure B614. Leave Base
1840 at hotel

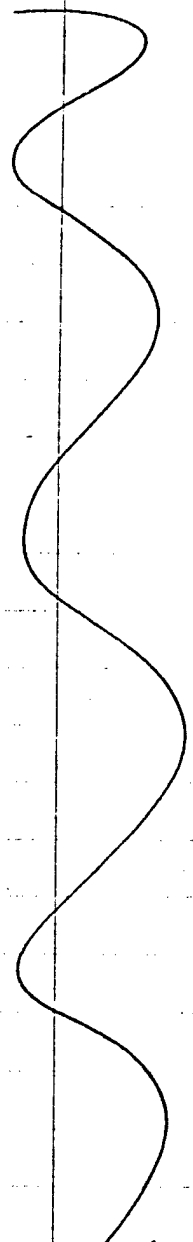
THURSDAY

21 September 1995

0643 Leave hotel
0712 On Base
Set up for developement of 651-001MWB.
Calibrate PID & LEL
0743 At 651-001MWB to Develope.
There is free product in water
0805 CALL R. CASON to INFORM.
Call him back in 10 min.
0822 CALL R. CASON.
CALL D. Groutage. He will send a drum to containerize water.
0840 Secure site. Go to FEDEX to pick up new printer for Hermit
0900 Done At FEDEX
0916 BACK ON BASE
Setup on 651-001 MWB.
1004 Finised Development
CALL RC. Need to Notify MPCA of free PRODUCT.
1015 Go Decon. Prepare for sampling.

1058 At 651-001MWA
Purge & Sample
1144 Done at 651-001MWA
Lunch (0.4)
1210 Decon equipmn
1218 At 651-002 MW to purge and samples
1315 Done. Go DECON
1324 At MW-4 to Purge, Sample & Take Dup.
1440 Done. Go Decon
1507 at 561-001MWB to SLUG Test.
1555 Done At 651-001MWB
At B614. Prep Samples for Shipmnt
PACK YSI-3500 for Return
Pack Printers (2) & TRANSducer for Return
Secure B614
1735 Leave Base
1808 Done. At FEDEX.
Go to TARGET To get PADLOCK

1842 At Hotel



18.7
7.1
11.6

11.6 hrs

22 Sept 95

0655 Leave hotel
0713 On Base
RA downloads Hermit onto disk.
Prepare to take water levels & Sample (if necessary)
651-001MWB.

0732	801-001MW	6.34'	BTOC
0739	873-001MW	7.64'	"
0748	591-001MW	17.33'	"
0803	651-002MW	11.27'	"
0812	651-001MWA	6.42'	"
0819	MW-4	15.56'	"
0824	651-001MWB	13.50'	"

0830 Check for Product. Lose bailer downhole. Bailer was a decowed Teflon Bailer.
CALL R. CASON. He and Capt. Hubert say to leave it in well and sample.
Purge & Sample
1010 Secure site. Drummed all Devel. & Purge water

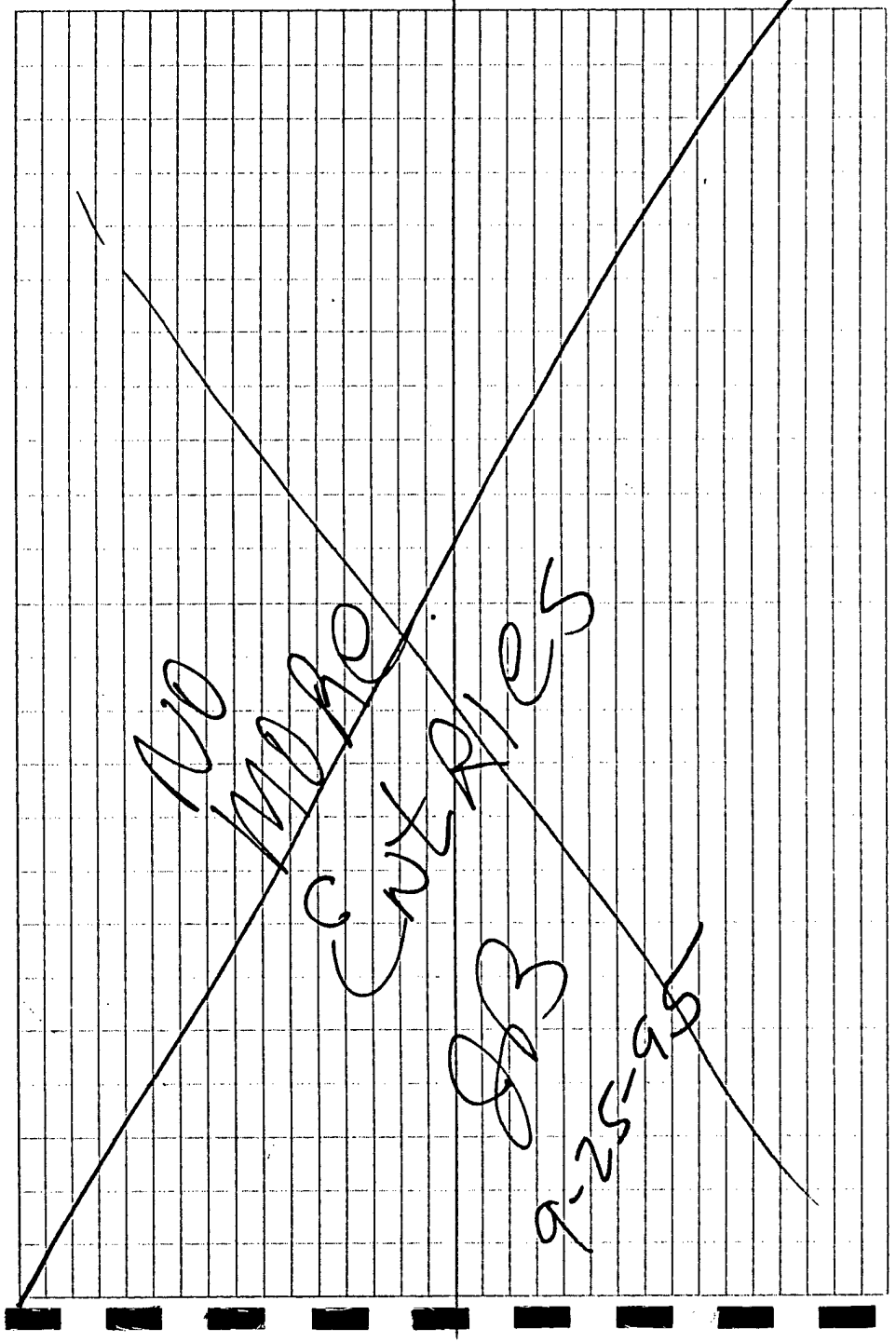
22 SEPT 10

Prepare samples for shipment
RA Packs Stuff.
RA will at 1200. I will stay
and finis packing stuff.

1053 Leave base.
1101 Drop RA off at Airport
1108 At FEDEX Ship samples
1130 Done at FEDEX
1143 On Base
Continue packing stuff.
1300 Goto FEDEX
1315 at FEDEX
1335 Done At FEDEX
1342 lunch (0.3)
FILL up VAN
1424 Back on Base
PALLetize boxes
1511 Secure B614 ~~Lock~~ GB
1515 Debrief Capt. Hubert. Leave base
TURN in RENTAL VAN.
2230 Home

22.5
7.2
15.3

15.3 hrs



Time	°C Temp	pH	Cond	CLARITY	VOL
1527	13.8	16.7	441	Cldy	1.5 gal
1533	13.1	No Reading	420	"	3.0 gal
1540	13.1	"	409	"	5.0 gal
1547	13.1	"	409	"	6.0 gal

Done purging
Prepare Sample Labels.
1605 Sample 651-001 MWB.
1630 Done w/ sampling & C-O-C
Attempt to Fish out Bailer.
10 lb line is insufficent.
Will get stronger line & Return Tomorrow.
1712 Done at Site. ALL RENTAL equipment is ready for shipment.
1715 Leave Base. Goto FEDEX.
AT FEDEX.
1739 Done @ FEDEX
1800 At Hotel

DUL	4.0 hr
MINN	8.3 hr
	12.3 hr

DRL

TRAVEL DAY

0744 Leave hotel
0815 On Base
Debreif Cpt. Huber
0850 Leave base
Fill up CAR. Goto Airport
260 miles on Mileage
1720 Home

6.
17.3
7.7
9.6

LBurr

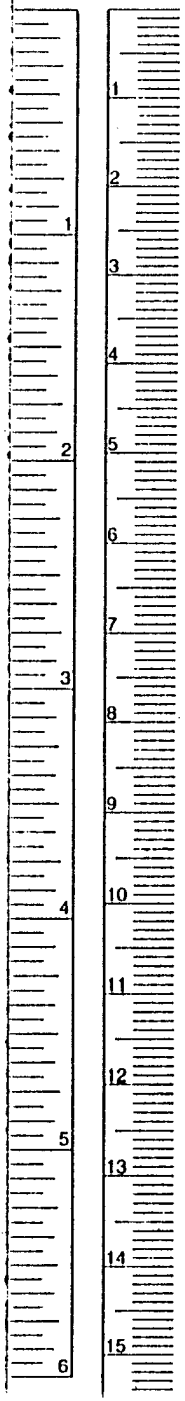
9.6 hr

THURSDAY 26 OCTOBER 1995

Weather: Sunny
Hi: 40's

0545 Leave Base/B Hotel
0645 On Base
Begin Packing stuff for shipment.
0820 Goto Munitions STORAGE. TALK to KP
0830 Leave for Hotel. Pack
0943 Leave for MINNEAPOLIS
1238 At MINN-ST. P FEDEX
1255 On Site at MINN ANGB.
Cpt. Hubert out to lunch.
Check @ shipping & Receiving for supplies.
STUFF NOT THERE
1305 CALL M. ESCOBAR
1310 CALL K. SATERfield (SPL)
1347 at 651-001MWB
PID — 260+ PPM
Water Level — 12.73' BTOC
INTERMITTANT Beeping

This means WATER
Go use phone
1407 CALL J. HANSON.
1412 CALL SPL (K. SATERfield)
#1950405195
TPH-DRO WDNR
TPH-GRO WDNR
SW8240 - VOC
Lead - SW6010
1418 Goto FEDEX
VSI & Ice Box are in Back on Base
1511 At 651-001MWB.
PID — 143 ppm
Water Level — 12.73"
Total depth — 21.5"
1 Well Volum — 1.4 gal
3 Well Volumes — 4.3 gal



MEASUREMENT CONVERSIONS

IF YOU KNOW	MULTIPLY BY	TO FIND
LENGTH		
inches	2.540	centimeters
feet	30.480	centimeters
yards	0.914	meters
miles	1.609	kilometers
millimeters	0.039	inches
centimeters	0.393	inches
meters	3.280	feet
meters	1.093	yards
kilometers	0.621	miles
WEIGHT		
ounces	28.350	grams
pounds	0.453	kilograms
grams	0.035	ounces
kilograms	2.204	pounds
VOLUME		
fluid ounces	29.573	milliliters
pints	0.473	liters
quarts	0.946	liters
gallons (U.S.)	3.785	liters
milliliters	0.033	fluid ounces
liters	1.056	quarts
liters	0.264	gallons (U.S.)
TEMPERATURE		
°C = (°F - 32) x .555		
°F = (°C x 1.8) + 32		

Inches	Decimals of foot	Milli-meters
1/16	.0052	1.5875
1/8	.0104	3.1750
3/16	.0156	4.7625
1/4	.0208	6.3500
5/16	.0260	7.9350
3/8	.0313	9.5250
1/2	.0417	12.700
5/8	.0521	15.875
3/4	.0625	19.050
7/8	.0729	22.225
1"	.0833	25.400
2"	.1667	50.800
3"	.2500	76.200
4"	.3333	101.60
5"	.4167	127.00
6"	.5000	152.40
7"	.5833	177.80
8"	.6667	203.20
9"	.7500	228.60
10"	.8333	254.00
11"	.9167	279.40
1 foot	1.0000	304.80

"Rite in the Rain"®
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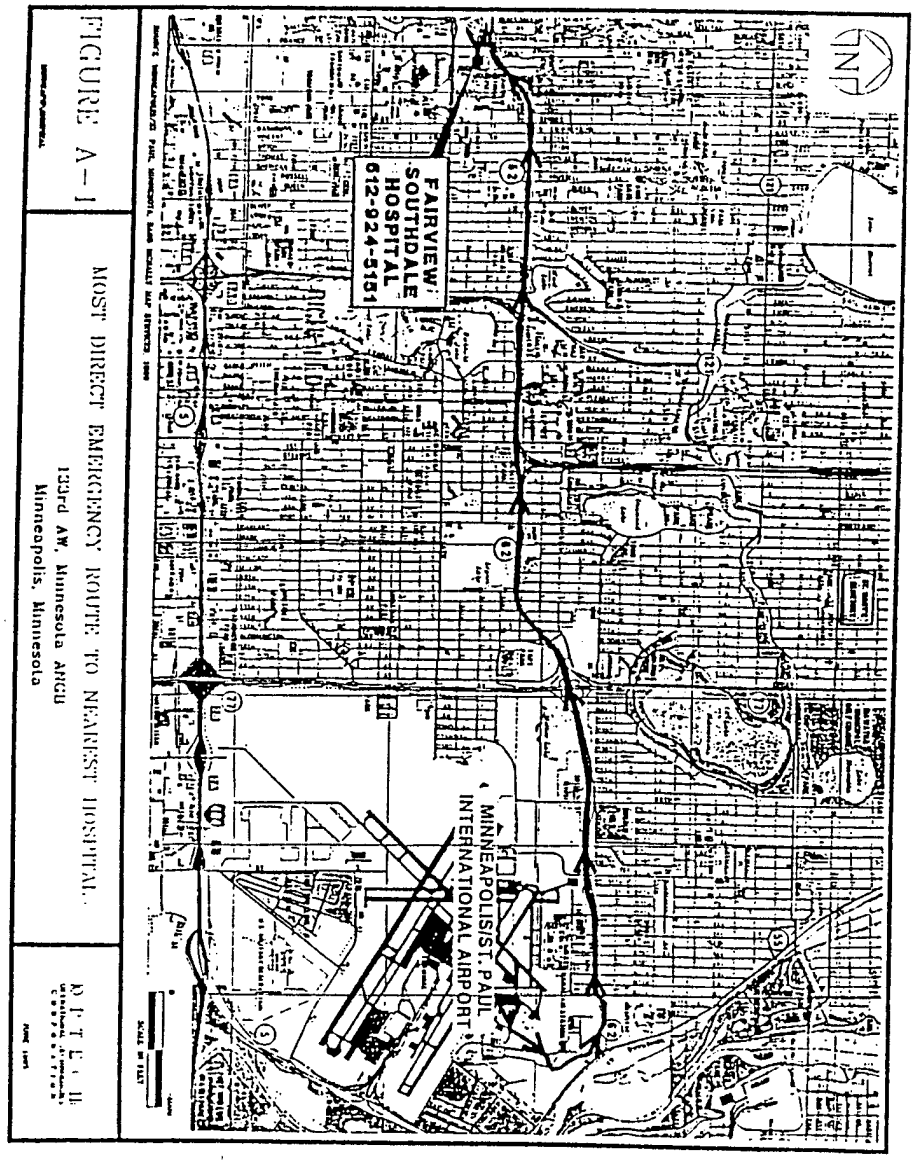
PAGE	REFERENCE	DATE

Project Team Members:

Project Manager - Russell Gibson
Site Safety Officer - Jon Williams
GC - Person - Joe Byrd, Jr.
Decon Person - Iris Arredondo

Start Up Date - July 31st

Drilling Team:



EMERGENCY CONTACTS AND AIR MONITORING ACTION LEVELS

EMERGENCY CONTACTS

In the event of any situation or unplanned occurrence requiring assistance, the appropriate contact(s) will be made from the list below. For emergency situations, contact will first be made with the Site Manager (SM), who will notify emergency personnel, and then contact the appropriate response teams. This emergency contacts list must be kept in an easily accessible location at the site.

Minnesota Air National Guard Base Contingency Contacts

Contact	Phone Number
Capt. Loren Hubert (ANGB Environmental Coordinator)	612/725-5038
Mr. Mike Kubatz (ANGRC Project Manager)	301/836-8762
ANGB Security	5600
ANGB Fire Dept.	5600
ANGB Medical	5600
Poison Control Center	800/332-3073
Mr. John Morris (OpTech ANG Program Manager)	800/677-8072

Medical Emergency

Contact	Phone Number
Emergency Room Fairview Southdale Hospital 6401 France Ave. S. Edina, MN 55435	612/924-5151
Ambulance Service	5600

Route to Hospital: Exit Base on Minnehaha Avenue and proceed 0.6 miles to the Highway 62 intersection. Turn left on Highway 62 and proceed approximately 7.5 miles to France Avenue. Turn left on France Avenue and proceed 1 block to 65th Street. Turn left on 65th Street. Follow signs at hospital entrance to EMERGENCY ROOM.

Travel time from site: 10-15 minutes in normal traffic. Map to hospital on following page.

AIR MONITORING ACTION LEVELS

Air Monitoring Action Levels

Concentration of Organic Vapor in Breathing Zone*	Action
> 10 ppm total volatile organic vapors	Stop work until levels dissipate or ventilate area.
1 ppm benzene	Stop work until levels dissipate, or ventilate area.

EMERGENCY RESPONSE PLAN

It is the contractor's policy to evacuate personnel from areas involved in hazardous material emergencies and to summon outside assistance from agencies with personnel trained to deal with the specific emergency. This section outlines the procedures to be followed by the contractor's personnel in the event of a site emergency. These procedures are to be reviewed during the on-site safety briefings conducted by the Site Safety Officer (SSO).

At least one person at the site will have current certification in First Aid and Cardiopulmonary Resuscitation (CPR). Paramedics will be summoned in the event of a serious injury; they will arrange to transport the victim to the nearest appropriate facility. A first aid kit will be available at the site for use in case of minor injuries. If anyone receives a splash or particle in the eye, a portable eyewash will be used to irrigate the eye with either saline eyewash solution or potable water for 15 minutes. If direct contact with contaminants occurs, affected skin areas will be washed immediately with soap and water.

In the event of serious trauma or unknown chemical exposure, the employee should receive First Aid while the emergency phone number list is consulted and an ambulance immediately requested.

Workers with suspected back or neck injuries are NOT to be moved until professional emergency assistance arrives, unless immediate life-threatening conditions exist.

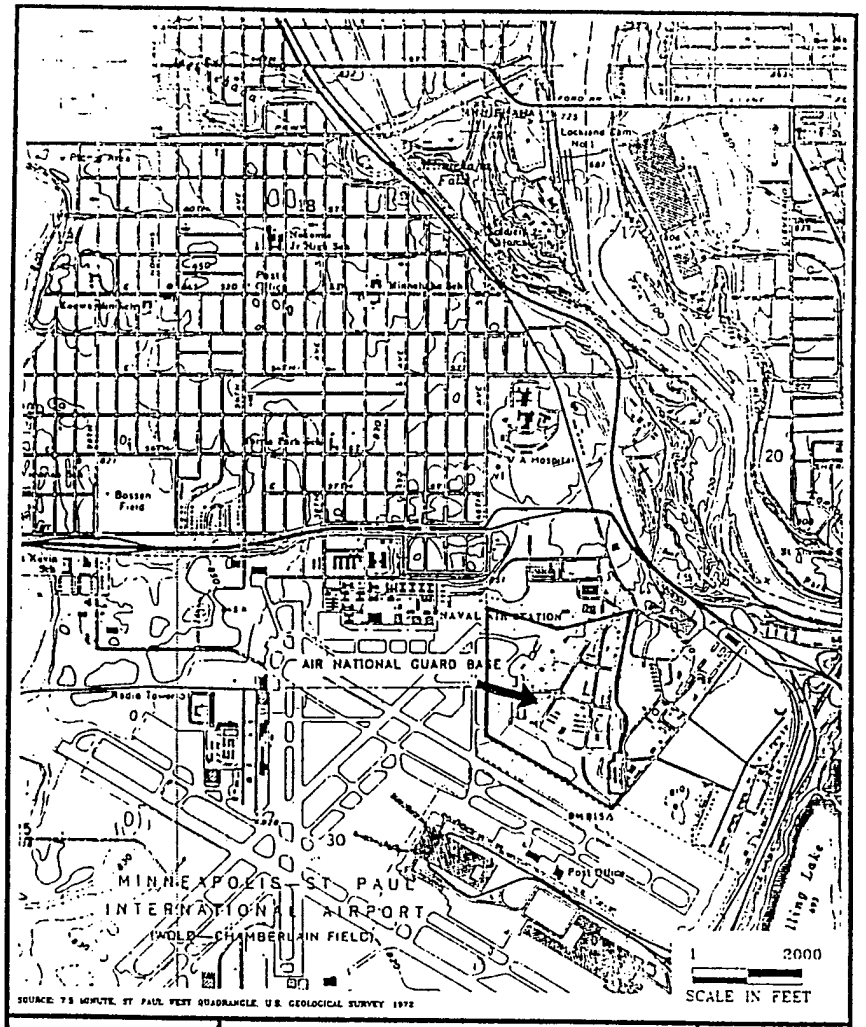
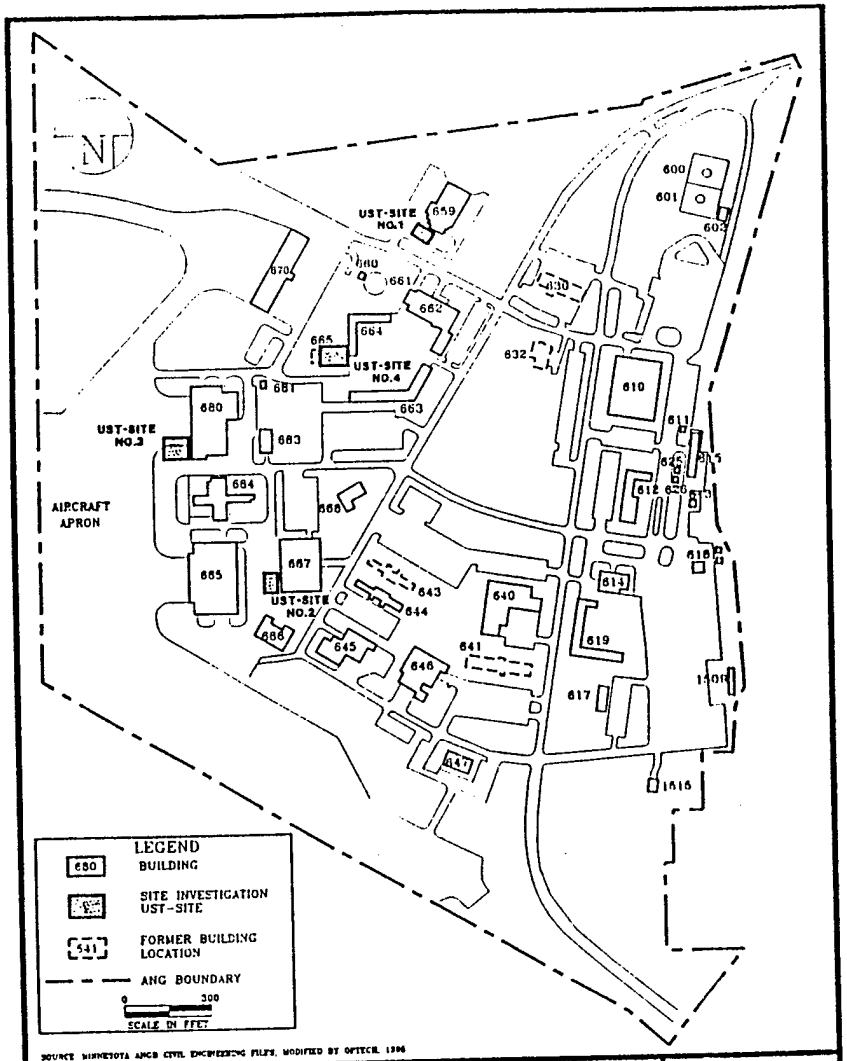


FIGURE 3.1

TOPOGRAPHIC MAP

133rd AW, Minnesota ANGB
Minneapolis, Minnesota



INSIDE BACK COVER

MINNEAPO\MINNBASE

LOCATIONS OF FORMER UST-SITES

133rd AW, Minnesota ANGB
Minneapolis, Minnesota

OPTECH

JUNE 1996

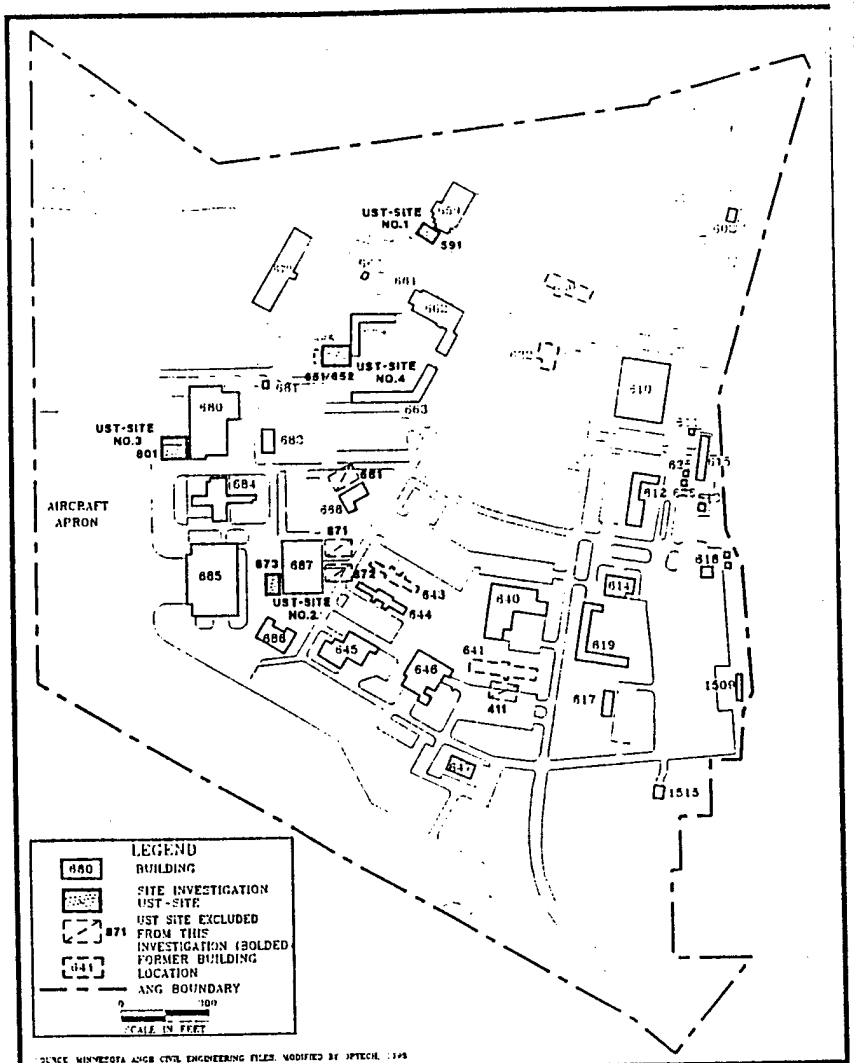


FIGURE 3.3

MINNEAPO\MINNBASE

LOCATIONS OF NINE REMOVED USTs

133rd AW, Minnesota ANGB
Minneapolis, Minnesota

OPTECH

JUNE 1996

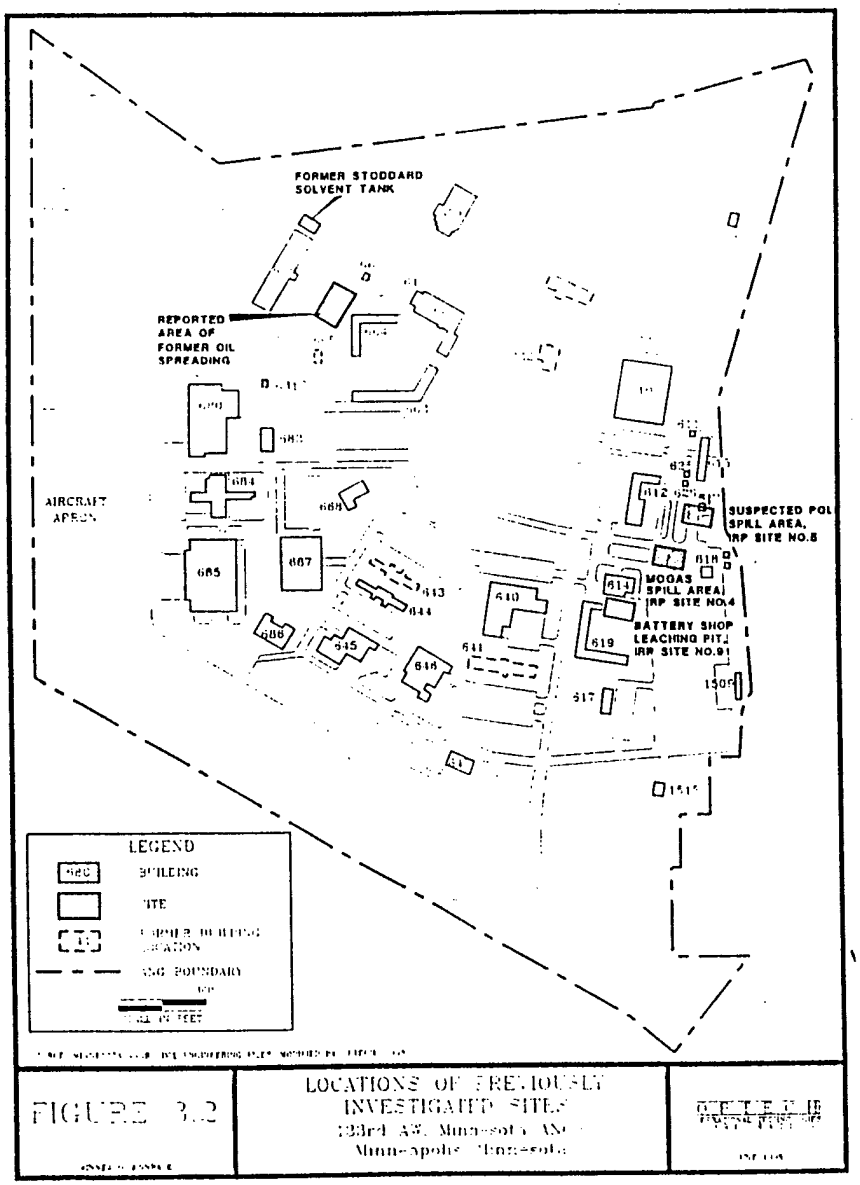


FIGURE 3.2

LOCATIONS OF PREVIOUSLY INVESTIGATED SITES
133rd AW, Minnesota ANG
Minneapolis, Minnesota

Table 5.1
Drilling Program Summary Table
133rd AW, Minnesota ANGB, Minneapolis, Minnesota

	UST – Site No. 1 Former UST No. 591 Site	UST – Site No. 2 Former USTs No. 651/652 Site	UST – Site No. 3 Former UST No. 801 Site	UST – Site No. 4 Former UST No. 873 Site
Number of Boreholes	4	6	3	3
Estimated Depth of Boreholes (Feet BLS)	10	16	13	13
Number of Monitoring Wells	2	3*	1	1

UST – Underground Storage Tank.
BLS – Below land surface
*Total includes one existing monitoring well at the site.

Water level measurements will be taken in the soil borings after a minimum time limit of 30 minutes after attainment of total depth, unless borehole stability or safety concerns are in question. Soil borings will be abandoned by backfilling with cement/grout after the sampling and water level measurements have been completed to prevent downward migration of contaminants through the open borehole. All soil borings will be grouted from the bottom of the borehole to the surface. The cement grout shall consist of a mixture of portland cement, ASTM C-150, and water in the proportion of not more than seven gallons of clean water per bag of cement (one cubic foot or 94 pounds). Additionally, a three percent by weight volume of bentonite powder will be added to the mixture. All borings will be clearly marked or guarded at all times until backfilled.

5.3.2 Ambient Air Monitoring

During drilling operations, a PID will be used to monitor the breathing zone for organic vapors to determine the need for respiratory protection. Special attention will be given to monitoring the compressed air exhaust from the borehole during air rotary drilling operations. Specific monitoring details and action levels are discussed in the Health and Safety Plan (Appendix A). A CGI will be used during drilling operations to monitor for explosive gases. Special actions will be required if explosive vapors reach 10 percent of the lower explosive limit (LEL) or if

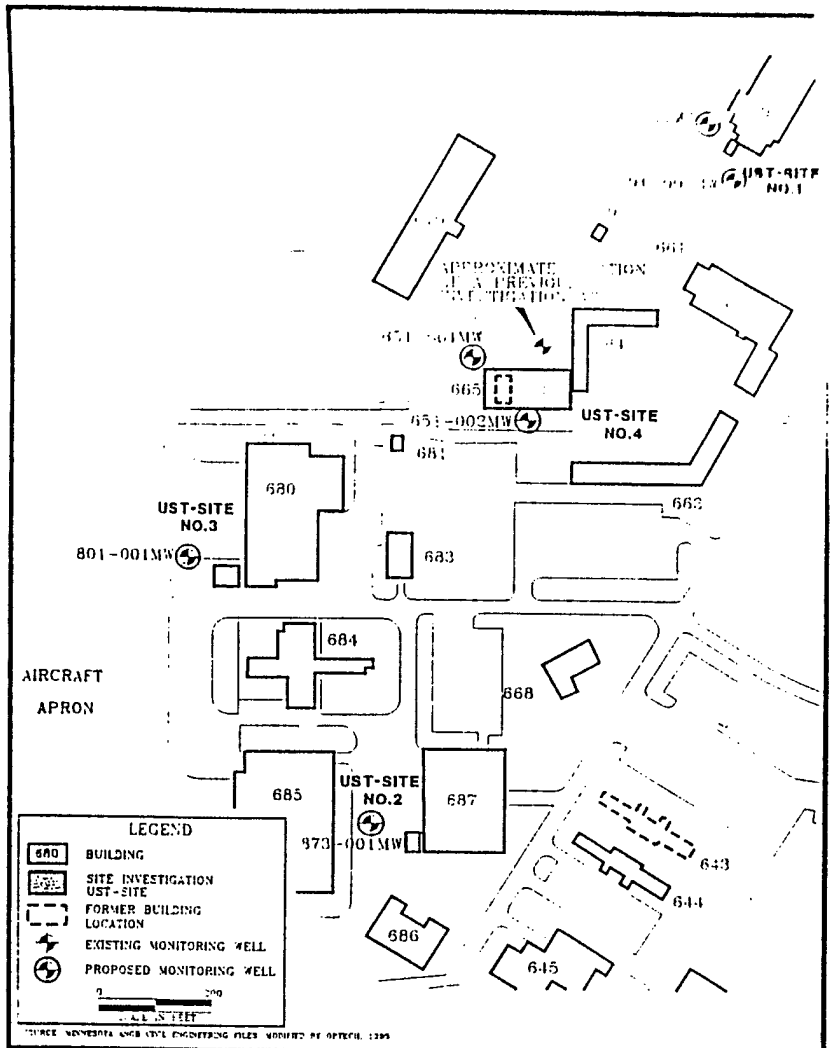


FIGURE 5.3

LOCATIONS OF PROPOSED MONITORING WELLS AT UST-SITES NO 1 THRU NO 4
133rd AW, Minnesota ANGB
Minneapolis, Minnesota

Table 6.1
Investigative Derived Waste Testing Program
133rd AW, Minnesota ANGB, Minneapolis, Minnesota

Site No.	Matrix	Lab Parameters and Test Methods	Estimated Composite Samples
1 (Tank 870)	Soil Cuttings	BTEX/SW8020 TPH/WDNR DRO TCLP (VOCs and SVOCs)*	1
	Development and Purge Water	VOCs/SW8240 TPH/WDNR DRO	0*
2 (Tank 873)	Soil Cuttings	VOCs/SW8240 TPH/WDNR DRO TCLP (VOCs and SVOCs)*	1
	Development and Purge Water	VOCs/SW8240 TPH/WDNR DRO	0*
3 (Tank 801)	Soil Cuttings	BTEX/SW8020 TPH/WDNR DRO TCLP (VOCs and SVOCs)*	1
	Development and Purge Water	VOCs/SW8240 TPH/WDNR DRO	0*
4 (Tanks 651/652)	Soil Cuttings	BTEX+MTBE/SW8020 TPH/WDNR GRO TPH/WDNR DRO Lead/SW6010 TCLP (VOCs and SVOCs)*	1
	Development and Purge Water	VOCs/SW8240 TPH/WDNR GRO TPH/WDNR DRO Lead/SW6010	0*
NA	Spent Decon Water	VOCs/SW8240 TPH/WDNR GRO TPH/WDNR DRO Lead/SW6010	2
NA	Miscellaneous IDW	None	0

UST – Underground Storage Tank.
BTEX – Benzene, Toluene, Ethylbenzene, and Xylenes
TPH – Total Petroleum Hydrocarbons.
DRO – Diesel Range Organics.
TCLP – Toxicity Characteristic Leaching Procedure.
WDNR – Wisconsin Department of Natural Resources.
GRO – Gasoline Range Organics.
VOCs – Volatile Organic Compounds.
SVOCs – Semivolatile Organic Compounds.
IDW – Investigation Derived Waste.

*Optional analyses as per Section 6.1.1.
*Results of groundwater sampling considered representative of drum contents. Therefore, no additional sampling required.

3.4.1.1 Calibration of the PID

The PID will be calibrated in accordance with the manufacturer's instructions prior to the start of each day's activities, and periodically throughout the day. The calibration procedure will be logged in the field notebook and will include the date, equipment manufacturer, serial number, the name of the person calibrating the equipment, and the results of the calibration. Any significant changes in temperature at the site will also result in equipment calibration. Additionally, if any anomalies are noted which might indicate the equipment is out of calibration, the equipment will be immediately recalibrated and the measurement retaken.

For the field work conducted at Minnesota ANGB, a PID will be rented from an equipment supplier. Should the equipment fail to calibrate to specifications or require any maintenance other than daily calibration, battery charging or replacement, and/or cleaning of the instrument lamp, all site work will be suspended until the instrument is replaced with another unit.

3.4.2 Monitoring for Heat Stress

To monitor the worker, one of the following methods may be used:

- Heart rate: Count the radial pulse during a 30-second period as early as possible in the rest period. If the rate exceeds 100 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third and keep the rest period the same. If the heart rate still exceeds 100 beats per minute at the next rest period, shorten the following work cycle by one-third. Suggested frequency of monitoring is listed in Table 3.1.

- Oral temperature: Use a clinical thermometer (3 minutes under the tongue) or similar device to measure the oral temperature at the end of the work period (before drinking).

    - If oral temperature exceeds 99.6° F (37.6° C), shorten the next work cycle by one-third without changing the rest period.

    - If oral temperature still exceeds 99.6° F (37.6° C) at the beginning of the next rest period, shorten the following cycle by one-third.

    - Do *not* permit a worker to wear a semipermeable or impermeable garment when oral temperature exceeds 100.6° F (38.1° C).

Table 3.1
Suggested Frequency of Physiological Monitoring for Workers[1,2]

Adjusted Temperature[3]	Normal Work Ensemble[4]	Impermeable Ensemble
90° F (32.2° C) or above	After each 45 minutes of work	After each 15 minutes of work
87.5° - 90° F (30.8° - 32.2° C)	After each 60 minutes of work	After each 30 minutes of work
82.5° - 87.5° F (28.1° - 30.8° C)		After each 60 minutes of work
77.5° - 82.5° F (25.3° - 28.1° C)		After each 90 minutes of work
72.5° - 77.5° F (22.5° - 25.3° C)		After each 120 minutes of work

[1]Source: NIOSH, 1985. *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities.*
[2]For work levels of 250 kilocalories/hour.
[3]Calculate the adjusted air temperature (ta adj) by using this equation: ta adj° F = ta° F + (0.13 x percent sunshine). Measure air temperature (ta) with a standard mercury-in-glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent of the time the sun is not covered by clouds that are thick enough to produce a shadow. (100 percent sunshine = no cloud cover and a sharp, distinct shadow; 0 percent sunshine = no shadows.)
[4]A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.

3.4.3 Monitoring for Cold-Related Illness

Start (oral) temperature recording at job site:

- At the SM's discretion when worker's performances or mental status changes in a manner which may indicate cold-related illness.

- At worker's request.

- As a screening measure, two times per shift, under unusually hazardous conditions (e.g., wind chill less than 20° F, or wind chill less than 30° F with precipitation).

- As a screening measure whenever any one worker on the site develops hypothermia.

Any person developing moderate hypothermia (a core temperature of 92° F) cannot return to work for 48 hours.

3.5 DUST CONTROL

If drilling operations generate a sustained visible dust cloud, a water mist will be applied to reduce dust generation. If the mist is not effective in reducing dust generation, personnel will don respirators (half-face or full-face as appropriate for analyzer readings) with combination organic vapor-HEPA cartridges (such as MSA's GMC-H cartridges).

3.6 PERSONAL PROTECTIVE EQUIPMENT

Minimum Protective Equipment for Site Personnel:

- Hard hat.
- Safety glasses.
- Steel-toed boots.

Work/Exclusion Zone Requirements:

- Hard hat.
- Eye protection (face shield or safety glasses).
- Chemical-resistant steel-toed boots.
- Ear protection in vicinity of heavy equipment.
- Work gloves.
- Coveralls.

If analyzer reading greater than 5 ppm in breathing zone, add:

- Tyvek™ coveralls.
- Nitrile gloves.
- Surgical latex or vinyl gloves.

If analyzer reading greater than 10 ppm in breathing zone, add:

- Half-face respirator with organic vapor cartridges.

If potential for liquid contact:

- Use poly-coated Tyvek™ coveralls in place of uncoated Tyvek™.

July 31st

7:00 – 8:00 A.M. Briefing Meeting
8:00 – 8:30 A.M. Travel to Base
8:30 – 9:00 Meeting with GM. 1 hr out
9:00 – 9:20 Civil Engineering
9:20 – 9:50 Looking for work Sites
10:00 – 11:19 Marking drilling Site 2 + Site 3
11:28 – 12:00 Marking Drilling Site #1
12:15 → Return to Office
~~12:00~~ 12:15 Civil Engineering
12:16 – 12:45 Raining
1:00 – 2:00 Lunch (Off Base)
2:00 – 2:15 Loading Supplies
2:15 – 2:45 Coordinating Room for GC + Checking Utility Map
2:45 – 3:20 Unloading Supplies
3:20 – 4:45 Marked Location of Borings + Monitoring wells for Site #4 w/ Russell Casa
~~5~~ 5:00 Off Base

7-31

5:10 Shopping at Target for Supplies
5:30 Leave for Hotel
5:40 Arrive at Hotel
5:50 Getting Equipment for Calibration
7:00-7:45 Calibrating PID & Exp. Meter & Checkout

Jon Williams

8-1

6:00 Load Van
6:10 Debark for Base
6:28 Arrive at Boso
Get Security Pass
Contact Clubs for Breakfast
7:10 Hold Safety Meeting
7:20 Finished Meeting
7:30 Meet with Loren Hubert Planning Daily Activities
8:00 Helping Joe & Iris set up for day.
9:00 Filling Eye Wash Station with Iris & Clearing Up & Waiting for O.K.
9:40 Checking back with office
9:50 Traveling to Sites #1, 2, 3, 4
10:00 Back to Staging Area
11:15 Drillers Arrive & Take To Decon Area
11:45 Lunch
12:15 Drillers Onsite
12:30 Set up Decon Tables
1:00 P.m. Safety Meeting
1:20 P.m. Boring GSI-001BH Started
1:38 P.m. Breathing Zone at Background

8-1-95

1:38 P.M. Soil Reading at 8 ppm
1:41 P.M. PID Reading 20 ppm Vapor Space
Spoon 0 ppm / 2nd Spoon 1st Drilling
1:45 P.M. Breathing Zone Reading 0 ppm
2:10 P.M. Hit HSA Refusa
2:15 P.M. Setting Up for 651-002BH
2:20 P.M. Started Drilling
2:30 P.M. First Spoon PID - 0 ppm
2:35 P.M. Breathing Zone Reading 0 ppm
2:40 P.M. Second Spoon PID - 0 ppm
2:45 P.M. Finished - hit Ground Water
3:15 P.M. Took Water Level reading 11' 5"
3:15 P.M. Hubert came to Site
3:18 P.M. Drillers went for cement to Grout
3:30 P.M. Drillers Returned
3:35 P.M. Cleaning Up
4:00 P.M. Packing Up Supplies & Equipment
4:30 P.M. Waiting for Drillers to bring Grout
4:50 P.M. Moving Equipment To Maintenance Bldg

8-1-95

5:00 Preparing Tubbles for Tomorrow
5:45 Leaving Base
5:50 Arrive at Fedex
6:00 Leave Fedex
6:30 Shopping for Supplies
6:43 Arrive at Hotel

Drillers Today were:
Thomas White
Shayne Volden

8-2-95

5:50 Left Yard (Meeting Held)
5:55 Stopped at Denny's (Breakfast)
7:00 A.M. Arrived at Base
7:10 A.M. Packed up Supplys
7:45 A.M. Set ups at Site 4
7:50 A.M. Calibrated PIDs & Filled Water
8:10 A.M. Started Drilling; After Safety Meeting
8:17 A.M. PID Reading 10.4 - Background
1st Reading - 1.5 above background
2nd Reading - 0 above background
8:20 A.M. Recalibrated due to malfunction
Background 0.3 ppm
8:30 A.M. PID Reading on 2nd Spoon
~~Background~~ Boring 651-003BH - Reading
378 ppm & 362 ppm
8:33 A.M. Breathing Zone 0 ppm
8:40 A.M. Third Spoon Readings -
PID Reading (Front) - [illegible]
PID Reading (Middle) - 175
9:00 A.M. Breathing Zone Reading
410 ppm (Not Coming from Boring / Coming from Rear by Area using ~~Heating~~ Fan

8-2-95

9:00 A.M. Hot Patch Asphalt
9:10 A.M. Vapor Dissipated
9:14 A.M. Started Boring 652-004BH
9:20 A.M. First Spoon PID Reading - 1179 ppm
Background 7.4 ppm at Sampling Table from Asphalt Work
9:21 ~~Read~~ [illegible]
9:30 A.M. Head Space Reading - 16.2 ppm on Previous Sample 8.5-10' on Boring 651-003BH
9:40 A.M. Head Space Reading on 0-5' Boring 652-004BH - 258 ppm
9:43 A.M. Second Spoon Reading 0 ppm with a Background of 9.0 ppm
9:45 A.M. 210 ppm Background caused by asphalt operation returned to 9.6 ppm with 2 min.
9:55 A.M. Third Spoon / Boring 652-004BH Background 9 ppm / Reading 0 ppm / Hit Ground Water
10:06 A.M. Breathing Zone 7.7 ppm at Background level.
10:13 A.M. Headspace on 8-10' / PID Reading

8-2-95

— continued from 10:13 P.M. —
PID Reading 0ppm

10:16 A.M. Started Boring 652-005BH (Set up)

10:24 A.M. First Spoon / PID Reading 0 ppm with 5.5 ppm background

10:30 A.M. Breathing Zone - 9.9 ppm

10:36 A.M. Headspace or 0-1.5 0 ppm Reading

10:40 A.M. Second Spoon / PID Reading - 150 ppm - 6.2 Background - 144 ppm

10:57 A.M. Headspace Sample 3.5-5.5' - 7 ppm w/ 9.9 ppm background

10:59 A.M. Third Spoon / PID Reading - Background 11.8 ppm Reading 3 ppm

11:05 A.M. New Drillers Employees
Ron Mishler
Jack Kulhanek
Henry Holdvogt
Other Drillers Tim / Thomas White
Shayne Volden

8-2-95

11:19 A.M. Headspace - 17 ppm w/ background of 13 ppm

11:20 A.M. Fourth Spoon - Background 13 ppm PID - Reading 0 ppm

11:38 A.M. Headspace Reading 0 ppm w/ Background of 13.9 ppm

11:38 A.M. Contractors finishing Grouting Boring 652-005BH

12:30 P.M. Break for Lunch

1:00 P.M. Back on Site

1:25 P.M. First Spoon for 652-006BH

1:27 P.M. PID Reading 0 ppm with 22.9 background reading

1:35 P.M. Changed VITALS because of drift in readings. Calibrated PID SN 000284 at 100 ppm

1:42 P.M. Second Spoon PID Reading 0 ppm w/ background 0 ppm.

1:45 P.M. Breathing Zone - 0 ppm

1:50 P.M. Headspace for 3.5-5' Interval Sample - PID Reading - 0 ppm

8-2-95

2:00 P.M. Third Spoon 8.5' Interval PID Reading 0 ppm w/ 0 ppm background 8.5-10'

2:16 P.M. Headspace reading 8.5-10' Interval - Reading 0 ppm

2:17 P.M. Fourth Spoon 13.5-15' Interval

2:45 P.M. Auger Refusal

3:00 P.M. Drillers Grouting Borings for day

3:30 P.M. Cleaning up & Packing Up / Cleaning Sleeves

5:35 P.M. Drove back to Bldg (Utility & Unpacked PID & Other Equipment

5:55 P.M. Leave Base

6:07 P.M. Arrived at Fedex

6:30 P.M. Arrived at Hotel

8-3-95

5:30 AM Departing Hotel

5:55 A.M. Breakfast at Denny's

6:30 AM Leave Bonnys

6:45 AM Stopped for Ice

6:55 AM Arrived at Base

7:10 ~~First Spoon of 652-007BH PID Reading 249 w/ 0.1 ppm Background~~

7:10 AM Calibrated PID & Eq.

8:35 AM First Spoon of 652-007BH PID Reading 249 ppm w/ 0.1 ppm background

8:20 AM Safety Meeting

8:49 AM Second Spoon 2-3.5' Interval - 339 ppm PID Reading

8:50 AM Headspace Sample from ~~First~~ Second Spoon - 145 ppm PID Reading

8:55 AM Breathing Zone Reading 0 ppm w/ background 0.3 ppm

9:13 A.M. Breathing Zone Reading 0 ppm

9:20 ~~Second~~ Fourth Spoon 2-3.5' PID Reading 339 ppm

9:23 Headspace on 8-10' Interval PID Reading 419 ppm

8-3-95

9:37 A.M. Fifth Spoon PID Reading — 8 ppm w/ 0 ppm background

9:56 A.M. Headspace on 13.5-15 PID Reading - 0 ppm.

10:25 A.M. Set-up Rig at Monitoring Well 651-001 MW

10:43 A.M. Lunch

11:30 A.M. First Spoon 0 ppm PID Reading w/ 0 ppm background

11:38 A.M. Second Spoon 0 ppm w/ 0 background

11:37 A.M. Headspace First Spoon — PID Reading 0 ppm

11:45 A.M. Drillers repairing auger

11:46 A.M. Breathing Zone 0 ppm w/ PID

11:59 A.M. Third Spoon PID Reading 0 ppm w/ 0 ppm Background

12:00 P.M. Headspace Second Spoon 0 ppm w/ 0 ppm background

12:01 P.M. Third Spoon had a moist sand layer

12:10 P.M. Holding for Russell while Samples are examined

8-3-95

12:27 P.M. Headspace on Third Spoon - 0 ppm w/ 0 ppm background on PID

12:30 P.M. Changed Decon Water

12:45 P.M. Helping Decon Crew

12:50 P.M. Attempting to set up tent, but tent broken & partially complete

1:23 P.M. Moving to another location to drill monitoring well.

1:47 P.M. First Spoon PID Reading 0 ppm w/ 0 ppm background

1:49 P.M. Breathing Zone 0 ppm PID Reading

1:59 P.M. Headspace on First Spoon - 0 ppm w/ 0 ppm B.G.

2:00 P.M. Second Spoon - PID Reading 0 ppm w/ 0 ppm Background

Monitoring Well 651-001 MWA

8-3-95

2:10 P.M. Checked 651-001MW Water level 6' 9 tenths from surface 007BH

2:15 P.M. Checked 652-002MW ~~at~~ for water / 14' 4 tenths from surface

2:20 P.M. Third Spoon at PSD Reading - 0 ppm w/ 0 ppm background

2:27 P.M. Head Space on Third Spoon - 0 ppm / w 0 ppm background

3:25 P.M. Down time due to Site Decision

3:26 P.M. Water Level in Monitoring Well 651-001MWA / 7.6'

3:29 P.M. Water Level in ~~Monitoring~~ Well 6 Boring 652-007BH / 14.9'

4:14 P.M. Drillers finished Grouting Boring 652-007BH.

4:20 P.M. Drillers left for Decon Station

8-3-95

4:28 P.M. Departed for Utility Building

4:35 P.M. Arrived at Utility Bldg. to prepare for tomorrow

5:06 P.M. Leaving Utility Bldg.

5:10 P.M. Leaving Base

5:28 P.M. Leaving Fed Ex

6:28 P.M. Arrive Hotel

8-4-95

5:52 A.M. Leave Hotel
5:55 Arrive at Denny's / Breakfast & Meeting
6:40 Depart Denny's
6:56 A.M. Arrive at Base
6:58 A.M. Arrive at Utility Bldg.
7:15 A.M. Calibrating / PID & LEL Meter
7:30 A.M. Travel to Mess Hall for ice
7:45 A.M. Arrived at Site 4 to setup for day
8:15 A.M. Drillers Arrive at Site
8:20 A.M. Tail Gate Safety Meeting
8:28 A.M. Start Drilling / Setup
9:10 A.M. Went to Contact Club to get out of the rain
9:58 A.M. Returned to site / waiting on drizzle to stop.
10:30 A.M. Rain Continuing
11:00 AM, Lunch
11:30 A.M. Set-up for Site 4 Work
11:45 A.M. Drillers started setting well

8-4-95

12:00 P.M. Set plug screen
12:19 P.M. Started Sand Pack
~~2:00~~ P.M. Started Bentonite Seal
2:04 P.M. Drillers Finished.
2:05 Cement layer
~~2:05~~ P.M. ~~Drillers moving to 651-002 mw / location to~~ Going to Decon to wash augers
2:35 P.M. Collected tails from 651-001MWA
3:00 P.M. Picking up & packing equipment because of rain & lightning
3:15 P.M. Finished Packing
3:27 P.M. Drillers Packed up & leaving and OpTech Personnel leaving site.
3:40 P.M. Arrive at Utility Bldg.
3:43 P.M. Leaving Base
4:35 P.M. Arrive at Hotel

8-5-95

5:51 A.M. Left Hotel

5:56 A.M. Arrived at Denny's for Breakfast & Meeting

6:39 A.M. Depart Denny's

6:53 A.M. Arrived at Base

6:54 A.M. Arrived at Utility Bldg.

7:18 A.M. Calibrated PID & Eg & H Meters

7:27 A.M. Arrived at Site 4 & Started Setting Up Decon & Staging Area

7:40 A.M. ~~Started Drilling~~ Drillers Arrived & Have Safety Meeting

8:13 A.M. Started Drilling

8:25 A.M. First Spoon / PID Reading - 0 ppm / w 0 ppm background

8:30 A.M. Second Spoon PID Reading - 0 ppm

~~8:44~~ 9:02 A.M. Third Spoon / 8.5-10' Interval 0 ppm

9:04 A.M. First Spoon / 2-3' Interval PID Headspace Reading - 1.9 ppm

9:05 A.M. Second Spoon / 4-5' Interval PID Headspace Reading - 79 ppm

8-5-95

~~9:25 A.M. Third~~

9:08 A.M. Third Spoon / 8.5-10' Interval / PID Reading 0 ppm

9:25 A.M. Fourth Spoon / 13.5-15' Interval / PID Reading 0 ppm

9:40 A.M. Headspace on Fourth Spoon PID Reading - 0 ppm

9:41 A.M. Drillers off to dump soil

9:48 A.M. Take water level in 651-001MWA; PID - 22 ppm; Water Level - 5.31 from surface

10:00 A.M. Checked water level in 651-002MW - no water level present

10:30 A.M. Drill out hole on 651-002MW to 15.3

10:35 A.M. Bottom of well material verified

10:55 A.M. Drillers back w/ 4" Steel Casing & Install 4" Steel Casing

8-5-95

11:05 Drillers off site get proper size pipe to use for grouting around casing

11:17 A.M. Russell Casing Lad to leave with Joe Byrd to get car & some supplies.

12:00 Noon Drillers back on site with pipe for grouting well casing

12:43 P.M. Drillers finished Grouting around Monitoring Well Casing 651-002MW

12:45 P.M. Started picking up equip.

1:01 P.M. Went to Site #1 to review site for Work Monday

1:05 Returned to Site #4

1:30 Went to Utility Bldg.

1:35 Went to Decon Area

1:45 ~~went~~ Left Base

2:00 Stopped to Eat Lunch

2:39 Arrive at Hotel

8-7-95

6:00 A.M. Leave Hotel

6:30 A.M. Arrive at Denneys for Breakfast & Meeting

7:00 A.M. Arrive at Base

7:10 A.M. Calibrate PID & Explo. Meter

7:15 A.M. Recover Tables & Park Equipment up at Utility Bldg.

8:05 A.M. Arrive at Site #1

8:10 A.M. Safety Meeting

8:16 A.M. Setting Up for Work

8:20 A.M. Started Drilling for Soil Boring

8:30 A.M. First Spoon on 591-001BH

8:35 A.M. Second Spoon 1.5-3' Interval - PID Reading - 14.6

8:40 A.M. Breathing Zone - 0ppm

8:45 A.M. Third Spoon 3.5-5' Interval PID Reading - 1.1 ppm

8:50 A.M. Headspace - 1.1 ppm 1.5-3' Interval

8:55 A.M. Headspace - 0.3 ppm on 3.5-5' Interval

8-7-95

9:00 A.M. 8.5-10' Interval PID Reading 0ppm

9:10 A.M. 13.5-15' Interval PID Reading 0ppm w/ 0ppm background

9:17 A.M. 8.5-10' Interval Headspace Reading - 0ppm

9:18 A.M. Breathing Zone PID Reading - 0ppm w/ 0ppm background

9:30 A.M. 16-17.5' Interval 0ppm Reading on Spoon

10:05 A.M. First Interval on 591-002BH - PID Reading 0ppm

10:10 A.M. Breathing Zone 0ppm

10:11 A.M. Second Interval (3.5-5') PID Reading 0ppm

10:12 A.M. Headspace on 1st Spoon 0ppm w/ 0ppm Background

10:15 A.M. Breathing Zone 0ppm

8-7-95

10:24 A.M. 8.5-10' Interval PID Reading - 0ppm

10:25 A.M. Headspace on 3.5-5' Int. 0ppm

10:37 A.M. Headspace on 8.5-10' Int. 0ppm

10:38 A.M. 13.5-15' Interval PID Reading 0ppm

11:00 A.M. Set up for 591-003BH

11:11 A.M. First Spoon 0-1.5' Interval PID Reading - 0ppm

11:30 A.M. Second Spoon 3.5-5' Interval PID Reading - 0ppm

11:32 A.M. Headspace on 0.5-1.5' Interval - 0ppm

11:35 A.M. Interval 8-10' PID Reading - 0ppm

11:40 A.M. Headspace on 3.5-5' Interval PID Reading - 0ppm

11:45 A.M. Breathing Zone 0ppm

11:52 A.M. Headspace on 9-10' Interval 0ppm

11:58 A.M. Water Reading on 591-002BH 13.2'

Top Anger Distance 14.6 - 13.2 = 1.4

8-7-95

12:10 P.M. Headspace on 14'-15' Interval - 0ppm

12:13 P.M. Lunch

12:45 P.M. Drillers Back

13:00 Grouting 591-003BH to surface

13:15 Grouting 591-002BH to surface

13:17 Water Level gaged on 591-001BH @ 12.9 BLS

14:45 Setting up rig for 591-004BH

14:48 First Spoon 0-1.5' Interval 0ppm PID Reading

14:49 Second Spoon 3.5-5' Interval 0ppm

14:59 Headspace on 0-1.5' Interval

15:00 Breathing Zone 0ppm

15:10 Headspace on 4-5' Interval 0ppm

15:12 8.5-10' Interval - PID Reading - 0ppm

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15:21 13.5-14' Interval PID Reading - 0ppm

15:35 15-16.5 Interval - 0ppm

15:36 Headspace on 13.5-14' Interval - 0ppm

15:58 18.5-19 Interval / PID Reading - 0ppm

15:59 Hit Water

16:07 Headspace on 15-16.5' Interval 0ppm PID Reading

16:34 Taking Auger out of 591-004BH Boring & Preparing to Grout Boring

16:38 Removed Auger from Boring 591-004BH

16:39 Mixing Grout

16:51 Finish Grouting

16:52 Added Grout to 591-002BH & 591-003BH / Added 2' to 591-002BH & 1.5' to 591-003BH

17:02 Added Grout to 591-001BH about 6"

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17:04 Drillers finished washing out lines after Grouting

17:10 Drillers leaving site for day.

17:11 Removing Barrier Tape

17:15 Leaving Site 1

17:20 Arrived at Utility Bldg.

17:25 Set PIDs & Expl Meter to Charge

17:34 Leave Utility Bldg

17:36 Checked Decon Area

17:39 Checked Site #1

17:41 Checking with Security about Decon Area

17:46 Went back to site #1 to correct a boring hole condition

17:53 Depart Base of / Traveling to Fedex

18:05 Arrived at Fedex

18:17 Leaving Fedex

18:55 Arrive at Hotel

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5:48 Depart Hotel

6:36 Depart Penney after breakfast & meeting

6:51 Arrived at Base & Calibrate Equipment

6:53 Went to Site #2 to talk to Building Personnel

6:59 Arrived at Utility Bldg.

7:32 Arrived at Site #1

8:10 Drillers arrive at Site #1

8:27 Set up for Drilling Monitoring Well 591-0041 MW

8:35 Started Drilling After Safety Meeting

8:44 First Spoon, 0-1.5 Interval Oppm - PID Reading

8:47 Breathing Zone - 0 ppm

9:03 Second Spoon 3.5-5' Interval Oppm / PID Readings / Oppm background

9:04 Headspace - Oppm on 0-1.5' Interval

9:14 Headspace - Oppm on 3.5-5'

9:20 Interval 8.5-10' PID - Oppm

9:30 Headspace - Oppm

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9: ~~10-13' Interval~~
~~PID Reading =~~

9:35 Breathing Zone - 0ppm

9:36 10-13' Interval
PID Reading - 0ppm

9:45 Driller Tom White went to Decon area for drum for soil

10:00 Driller Ron Mitchler on site to finish monitoring well on Site #4

10:05 Driller Tom White & Ron Mitchler went to site #4

10:20 Measured Water level in 591-001MW - None

10:39 Measured Water Level in 591-001MW - None

10:43 Measure Water Level & PID Reading:
PID Reading 0 ppm
Water Level - None

10:56 Measured Water Level on 591-001MW - None, Bailer Ponded on end of tape.

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10:58 Driller Finishing into Bedrock.

11:18 Drillers finished Boring & Bailing inside augers.

11:20 Lunch

12:20 Returned to site & Packed up Decon & Sampling Set-up, Drillers were grouting around steel well casing.

13:10 Drillers finished Grouting well casing.

13:17 Leave Site #2

13:19 Arrive at Site #1 to set up Decon & Sampling Table

2:30 Drillers Arrive at Site #2

2:35 Start Drilling

2:40 First Spoon Interval 1-2.5'
0ppm / 873-001BH

2:48 Second Spoon 3.5-5' Interval
PID - 0ppm

2:56 Breathing Zone - 0ppm

2:58 Headspace on 1.5-2.5 Interval
PID - 0ppm

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3:07 8.5-10' Interval / PID Reading - ~~0~~ 0.6 ppm

3:08 Headspace for 3.5-5' PID Reading - 0 ppm

3:19 8.5-10' ~~Interval / PID Reading - 0~~ Headspace 0 ppm w/ 0 background

3:20 Hit Bedrock at 10'

3:25 Took water reading on 873-001 BH Water Level 7.8' from Surface (BLS)

3:26 PID Reading on Boring was 0 ppm w/ 0 ppm background.

3:37 PID Reading on 873-001 BH was 0 ppm in Auger Water Level was 7.9' BLS

4:16 Will leave Site

4:30 Return to Utility Bldg.

4:47 Leave Utility Bldg. After putting PID & Explo Meters on charge

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4:56 Head to Site #1 to check

5:01 Left Base

5:06 Fedex

5:17 Leave Fedex after sending samples

5:36 Arrived at Hotel

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5:47 Leave Hotel
5:52 Arrive at Denneys for breakfast + meeting
6:30 Left Denneys
6:40 Stopped for Iced Sandwiches for Lunch
7:10 Arrived at Base
7:15 Arrived at Utility Bldg.
7:30 Finished Calibrating Meters & Packing Equip.
7:31 Arrived at Site #2
8:15 Safety Meeting
8:20 Finished Set-up & Drillers Started Drilling
8:25 Drilled 0-1'
8:28 First Spoon 1-2.5' Interval PID Reading - 0 ppm
8:34 Breathing Zone 0 ppm
8:39 Second Spoon 3.5-5' PID Reading - 0 ppm
8:52 Third Spoon 8.5-10' PID Reading - 0 ppm
8:54 Headspace 1.5-2.5' Interval PID Reading - 2.1 ppm

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8:55 Headspace on 4-5' Interval PID 0 ppm w/ 0.3 background
9:00 Auger Refusal on 873-002BH
9:05 Water Level & PID Reading on 873-002BH - Water Level - 8.2 BLS PID Reading - 0 ppm
9:30 Water Level & PID Reading on 873-002BH Water Level - 8.2 BLS PID - 0.5 ppm w/ 0.7 background
9:40 Breathing Zone around 873-003BH / Drillers breaking surface of asphalt
9:45 First Spoon 1.5-2' Interval PID Reading - 0 ppm with a 1.4 ppm background
10:08 Headspace on 1.5-2.5' Int. PID - 0 ppm
Headspace on 4-5' Int. PID - 0 ppm

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10:10 8'-10' Interval PID Reading - 0.0 ppm w/ 0.7 ppm background

~~10:50 Water Level on 873-003BH~~

10:20 Auger Refusal

10:50 Water Level on 873-003BH 7.3 BLS PID - 0.7 ppm

11:00 Pick up & Packing Equipment to go to Site #3

11:01 Drillorc Grouting 873-002BH & 873-003BH Holes

11:25 Left Site for Lunch

12:04 Returned to Site #2 to clean up site

12:24 Arrived at Site #3

1:00 Finished Setting up Decon & Sampling Table

1:15 Driller ~~Arrived~~ at Site

1:16 Started Safety Meeting

1:24 Finished Safety Meeting & Started Drilling

1:25 PM First Spoon 1 - 2.5' Interval PID Reading - 0 ppm

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1:38 P.M. 3.5-5' Interval PID Reading - 0 ppm

1:49 P.M. 8.5-10' Interval PID Reading - 292 ppm

1:50 Headspace of 4-5' Interval - 0 ppm

1:51 ~~8.5~~ 13.5-13.8 Interval PID Reading - 0 ppm w/ 0 ppm background

2:00 Headspace of 8.5-10' PID Reading - 587 ppm

2:15 At Final Depth of 15.5' Water Level - 9.6 on 801-001BH

2:37 First Interval 1-2.5' on 801-002BH / PID Reading 0 ppm w/ 0 ppm background

2:50 Water Level on 801-001BH was 9.6 / PID - 0 ppm

3:05 Moved 801-002BH to Approx 15' further out

3:10 First Interval 1.0-2.5' PID Reading - 0 ppm

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3:24 3.5-5' Interval PID Reading - 0ppm

3:25 Headspace of 1-2.5' PID Reading - 0.8ppm

3:26 8.5-10' Interval 0ppm PID Reading -

3:32 Headspace on 3.5-5' Interval - 0ppm

3:34 Breathing Zone - 0ppm

3:35 Hit Bedrock/Auger Refusal

3:38 Water Level in 801-001BH is 7.5 and PID Reading is 0ppm w/0ppm background

3:40 Drillers Grouting second boring of 801-002BH

3:45 Headspace on 801-002BH 8.5-10' Interval was 0ppm

4:15 Grouted 1st Drilling of 801-002BH and then 2nd Drilling up to 5' BLS (Ran short of grout)

4:16 Set up to Grout 801-001BH (Will finish 801-002BH with extra Grout.

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4:20 Went back to Site 1 to put extra grout in borings

4:30 Washing down Site #3

5:00 Went with Drillers to clean dirt on Pit 801

5:15 Went back to Site #3 and relieve Driller Thomas White who was finishing washing down Site

5:35 Driller left Site and dropped me at Utility Bldg.

5:40 Set up PID & LEL Meter on charge

6:09 Leaving Utility Bldg.

6:11 Leaving/Arriving at Site #2 to check out Site

6:15 Returned to Site #3 to Inspect

6:20 Arrived at Site #4 to lock Monitoring Well

6:45 Arrived Lab Store for Ice

6:57 Arrived at Fedex

7:43 Arrive at Hotel

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5:51 Leave Hotel
5:56 Arrive at Denneys
6:30 After Breakfast & Meeting Depart
6:45 Stop for Sandwich & Ice for Lunch & Samples
7:00 Arrive at Base
7:01 Arrived at Utility Bldg.
7:05 Calibrate PID & LEL Meter
7:34 Leaving for Site #3
7:35 Arrived at Site #3 & Set up for Drilling & Decon
8:10 Safety Meeting After Drillers Arrived
8120 Finished Safety Meeting & Drillers Set-up Rig on 801-003BH
8:40 First Spoon - 1-2.5' Interval PID Reading - 0ppm
8:42 Breathing Zone - 0ppm
8:46 Second Spoon - 3.5-5' Interval PID Reading - 0ppm
8:56 Headspace on 1-2.5' Interval 0 - ppm
8:57 Third Spoon 8.5-10' Interval 0ppm on PID Reading
8:58 Headspace on 3.5-5' Interval 0ppm
Note: Third Spoon is Soaked water.
9:05 Water Level & PID on 801-003BH:
Water Level - 6.6
PID Reading - 10.2 ppm
9:15 Headspace on 8.5-10' Interval - ~~0ppm~~ 11.3 ppm
9:30 Water Level on 801-003BH
Water Level - 6.8'
PID - 2.8 ppm
9:50 Driller Left Site to get Auger for Monitoring Well
~~9~~ 10:15 Drillers Return
10:20 Drillers Start Monitoring Well 801-001MW
10:30 First Spoon - Interval 1.5-3.0' 0 ppm

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10:36 Second Spoon Interval 3.5-5' + 0ppm

10:37 Headspace on 1.5-3.0' Interval - 0ppm

10:55 Third Spoon 8.5-10' Interval PID Reading - 0ppm

10:56 Headspace on 3.5-5' Interval 0ppm w/ 0ppm background

11:05 Water Level Reading on 801-003BH - 5.8' BLS and PID Reading - 0ppm w/ 0ppm background

11:12 Headspace on 8.5-10' Interval - 0ppm

11:15 Lunch

11:48 Water Level in 801-001mw Monitoring Well - 9' PID - 0ppm

11:54 Water Level in 801-003BH Boring - 5.8' BLS

12:00 Drillers preparing to set 1 Monitoring Well

12:30 Packing up equipment

Rig on Fl

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1:24 Drillers finishing grouting Monitoring Well 801-001mw

1:25 Leaving site with Russell to check on Site #4 & leaving Iris as Site Safety Officer

1:26 Arrived at Site #4

1:28 Departed and went to Site #1

1:32 Departed and went to Utility Bldg.

1:34 Set one of the PIDs and the LEL meter on charge

1:40 Performed Recordkeeping work & Log work

2:55 Travel to Site #3 to check on work

3:13 Travel to & Arrive at Site #1 to spread auger tailings

4:08 Finished & Returned to Utility Bldg.

4:14 Arrived at Utility Bldg. & Put remaining PID on Charge

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4:20 Depart Utility Bldg. & Traveled to Site #3 to check on work completion

4:37 Finished cleaning up site, with Joe, Russell, & Iris

4:39 Departed Site #3

4:41 Departed Base

5:03 Arrived at Hotel

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5:54 Departed Hotel

5:55 Arrived at Denny's for meeting

6:33 Depart Denny's

7:07 Arrived at Base

7:08 Arrive at Utility Bldg.

7:10 Calibrate PID & LEL meters

7:15 Pack Equipment in K. van to go to site.

7:37 Depart Utility Bldg.

7:38 Arrived at Site #2 to Set up for Monitoring Well 873-00 MW

7:48 Finished Setting Up Decon & Sampling table

8:03 Packed up Set-up Equipment & Sampling table because of weather

8:04 Depart Site #2

8:06 Arrived at Utility Bldg.

8:15 Went to Decon Area to talk to drillers

8:23 Return to Utility Bldg. & Performed Record Update

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9:30 Departed Utility Bldg.
9:32 Arrived at Site #2
9:35 Departed to get cones from Site #3 & Return to Site #2
9:40 Arrived at ~~Site #2~~ Site #2
~~10:45 Drillers arrived~~
10:45 Safety Meeting
10:00 Safety Meeting
10:10 Started Drilling & First Interval
~~to:~~ 0'-1.5' - 0.5 ppm/gas
10:15 Second Interval 3.5-5'
1.5'-3.0' - 0 ppm on 873-001mw
10:20 Headspace on 1.5-3.0' Interval 0 ppm
10:35 Packing up equipment because of rain
~~10:39 Headspace on~~
10:45 Headspace on 3.5-5' Interval 0 ppm
11:00 Start Drilling again
11:10 Drillers hit water
11:16 Break for Lunch, Trks left in charge of site
11:50 Back on Site #2
12:00 Water Level on 873-001mw

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Water Level - 7.1.5 BLS.
12:10 Drillers Starting to install well casing
12:40 Drillers finished putting sand, bentonite, & grout around well casing for monitoring well ~~80~~ 873-001mw
12:45 Drillers preparing to go to decon area & cleaning up site
1:50 Finished washing down Site #2
1:51 Departing to Site #4
1:52 Arrived at Site #4
1:53 Rig was being prepared to use Air Rotary Rig
1:58 Drill Bit would not fit in casing.
2:20 Drillers Tom & Shayne left site to get another bit
2:32 Departed Site #4
2:40 Arrived at Utility Bldg to get baylers

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2:44 Arrived back at Site #4 with Joe Byrd, Hydac Metro, & Bailers

3:40 Drillers back on site #4

3:50 Safety Meeting

4:00 Drillers attached rotary drill bit and started drilling

4:15 PID Reading indicated 0.5 ppm on air coming out of casing

4:20 PID on air off casing 0 ppm

4:22 Headspace on 17-20 Interval 0.5 ppm.

4:30 Start getting water

4:50 Head space of 20-22' was 5.5 ppm

5:00 Water Level on 651-002MW PID - 0.5 ppm
Water Level @ 10.6 BLS

5:02 Packing up equipment

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5:25 Driller left site at ~~5:25~~

5:27 Departed site

5:31 Arrived at Utility Bldg.

5:35 Put PID & LEL on charge

5:45 Depart Base

6:08 Arrive at Hotel

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6:35 Departed Motel
6:36 Arrived at Denny's
7:16 Depart Denny's
7:29 Arrived at Base
7:30 Arrived at Utility Bldg.
7:56 Departing Utility Bldg. after Calibrating PID
7:58 Arrived at Site #4 to develop Monitoring Well 651-001MWB
8:02 PID Reading on Well was 8.2 ppm
8:06 Arrived at Site # 3 to Monitor 801-001MW
8:10 PID on Well - 0.8 ppm
8:12 Arrived at Site #2 to Monitor ~~801~~ 873-001MW
8:14 PID Reading on Well - 0 ppm
8:16 Departed Site #2
8:18 Arrived at Utility Bldg. to pickup Hydac Conductivity Meter
8:35 Arrived at Site #4 to develop well
8:37 Begin Development of 651-001MWA & PID - 5.8 ppm

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Initial Water Level 3.39
Well Depth - 11.4' / Well Vol. - 1.73

4:02 Temp 71°F, Conductivity - 755, pH - 7.12 / First 5 gals
9:05 Temp. - 65.3°F
Conductivity - 748
pH - 7.60 / 5 second 5 gals
9:10 Stopped because of rain
9:28 Restart well development
9:32 Temp - 68.-
Conductivity - 714
pH - ~~7.00~~ 7.38
10 gals
9:36 Temp 67.2°F
Conductivity - 686
pH - 7.52
10 gals
9:42 Temp - 66.2°F
Conductivity - 630
pH - 7.88
12.5 gals
9:49 Temp - ~~66.6~~ 64.5°F
Conductivity - 594
pH - 7.98 / 15 gals.

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9:59 Temp – 65.7 °F
Conductivity – 643
PH – 8.2
Volume – 17.5

10:00 Water Level – Rising
Depth 13.2
~~Temp~~
~~Conductivity~~
~~PH~~

10:04 Stopped because of rain
Temp – 66.4 °F
Conductivity – 658
PH – 9.37
Volume – 20 gals

10:20 Final 21 gals
10:22 Quit because of rain
10:24 Depart site
10:25 Arrived at Utility Bldg.
10:35 Un pack equipment & set PID's on charge
10:42 Leaving Utility Building
10:43 Depart Base
11:21 Arrive at Hotel

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~~5:30~~
~~6:00~~ Departed Hotel
~~6:00~~
~~6:30~~ Arrived at Denny's & Meeting
6:30 Departed Denny's
7:00 Arrived at Base
7:10 Calibrated PID's & LEL Meter, PID Meter 000315 was malfunctioning, but later calibrated. The mode function would not switch and Reading would not go off when meter was turned off.
7:30 Went to Site #1
8:30 Driller were spotted at Site #4. They had to get gas.
8:35 Drillers left to Decon Rig. Shayne stayed to cut off excess pipe on 651-002 MW
8:50 Returned to Site #1
9:00 Shayne (Driller) brought Cutting Torch to Site #1 & then returned to Site #4 to get Drillers pickup truck.

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9:05 Shayne (Driller) returned to site with pickup & went back for van

9:09 Shayne (Driller) returned to Site #1 with van & air LEL compressor/Cut Excess Pipe, PID 0 ppm

9:30 Tom White (Driller) arrived with rig & Had Safety Meeting

9:40 Drillers regrouted around Well where grout subsided

9:50 Drillers started drilling out Monitoring Well 591-001MW

10:00 Breathing Zone & LEL reading 0 ppm & 0%

10:25 Breathing Zone - 2.7 ppm (Explo Exchange)

10:28 22-24' Interval - 0 ppm

10:29 Drillers at 28'

10:38 24-26' Interval - 0 ppm

Note: At 10:25 20-22' Interval was 0 ppm and at 9:58 18-20' Interval was 0.5 ppm.

10:40 Waiting to take water level but ~~not~~ no indication of water noted on shaft or Well.

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10:57 Drill Pipe was pulled & no water was present

10:59 Hit Water on 591-001 MW

11:10 Break for Lunch

11:40 Returned to Site #

11:45 Final Depth of Well 30'

11:47 Drillers pulling pipe

11:53 Pipe completely pulled

11:55 Well Casing Capped

12:01 Driller (Shayne) Taking Air Rotary back to Decon Area

12:04 Driller (Tom) starts surface completion

12:20 Shayne returns to pick-up barrels of Soil

12:35 Shayne returns with empty barrel for asphalt

12:45 Tom & Shayne (Drillers) go to Decon Area to dump asphalt

12:55 Driller return and poke up the remaining asphalt

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1105 Drillers cut well casing off at surface level

1:15 Leave site to drop samples with Joe Byrd at Utility Room and get ice on the way at the Mess Hall

1:20 Arrive at Mess Hall for ice

1:25 Arrive at Utility Bldg.

1:26 Depart Utility Bldg.

1:27 Checked Site #2

1:28 Returned to Site #1 to Wash Site Down

2:05 Finish Washing Site #1 & Depart to Site #2

2:07 Arrived at Site #2 to Check Site

2:08 Depart Site #2

2:15 Arrived at Decon Area - Drillers were just finishing emptying drums

2:20 Arrived at Building 642 to inquire about drum of Soil from Site #4 & where to dispose of contaminated soil

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2:40 Arrived with Drillers at Decon Area to dump Soil from #4 Site

2:54 Depart Decon Area

3:02 Arrive at Site #2 with Drillers to pick up drums of soil & meet with Russell Casor

3:18 Depart Site #2

3:20 Arrived at Decon Area Soil Piles to dump soil

3:29 Departed ~~Site #~~ Decon Area to pick mud and clods that fell on run.

3:38 Arrived at Site #2 to pick up last clods of mud from trucks

3:42 Arrived at Site #1 to talk to Russell about work plan

3:44 Depart Site #1

3:45 Arrive at Decon Area to check on Drillers

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3:52 Depart Decon Area with Drillers / Lock Gate to Decon Area

3:55 Arrive at Site #1 to check on Drillers

4:07 Arrive at Utility Bldg.

Note: Drillers left Base at 14:00 Hrs.

4:08 Put PID & LEL Meters on charge (battery)

4:35 Finished Packing Equipment for night

4:49 Depart Utility Bldg.

5:09 Arrive at Hotel

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6:45 Depart Hotel

6:50 Arrived at Denny's for Breakfast & meeting

7:35 Depart Denny's

7:53 Arrive at Base

7:54 Arrive at Utility Bldg.

8:10 Calibrate PIDs & LEL Meters

8:20 Packed up equipment into van

8:40 Departing Utility Bldg.

8:42 Arrived at Decon Area *

8:43 Arrived at Site # 2 *

8:44 Arrived at Site # 4 *

8:45 Arrived at Site # 1 *

8:46 Arrived at Utility Bldg.

9:02 Departed Utility Bldg.

9:03 Arrived at Decon Area

9:04 Arrived at Site # 1 / found Drillers

9:05 Arrived at Site # 4 with Drillers & cement truck

9:10 Drillers completed surface completion on 651-002 MW

9:15 Arrived at Site # 2 with

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9:43 Continued ... Drillers & Cement Trucks

9:35 Drillers completed surface completion on Site #2

9:40 Arrived with Drillers & Cement Truck at Site #1 to perform surface completion on Monitoring Well 591-001MW

9:46 Surface Completion completed

9:47 Driller & Cement Truck leave Site #1

9:50 Leave Decon Area / Cement Truck Decon'ed & Leaving

9:57 Drillers smoothing out cement at Site #2

10:00 Back at Utility Bldg. & waiting on Monitoring Well Pumps for Deep Well Development

10:05 Recordkeeping

10:05 Break for Lunch

11:41 Return from Lunch to Utility Bldg.

11:45 Arrived at Site #1 and rig up to develop

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12:15 Safety Meeting

12:25 Start Development of Well

12:30 Breathing Zone - 0 ppm with PID Ser.# 000284

1:45 Finish Monitoring Well Development on 591-001MW

1:55 Water Level - 21.2'

1:56 Decon Water Level Indicator Guage

2:00 Picking up Equipment to go to Site #4

2:22 Packed & Departing to Site #4

2:50 Water Level on 551-002MW is 10.26' to Water Level and 24.96' to bottom of well

3:22 Finished Development on Well 551-002MW

3:40 Finish Packing Equipment

3:47 Hovering for Environmental Person left Site #4

3:52 Left Site #4

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3:57 Arrived at Decor Area to inspect area
3:58 Arrived at Utility Bldg.
3:59 Unpacked equipment & put on charge
4:20 Departed Base
4:40 Arrived at Hotel

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5:55 Depart Hotel
6:36 Arrive at Denny's and have meeting
6:30 Depart Denny's
6:50 Arrive at Base
6:51 Arrive at Utility Bldg.
7:00 Calibrate GIDs & LEL meters & Packed Equip.
7:35 Depart Utility Bldg.
7:38 Arrived at Site #3
8:15 Finished measuring Site dimensions & boring & mw Locations
8:18 Returned to Utility Bldg. to check with Contract Status
8:27 Departing Utility Bldg.
8:30 Arrived at Site #2 to take measurements
8:58 Finished Measurements at Site #2
9:15 Take measurements on Site #4
9:55 Finished measurements on Site #4
10:00 Returned to Utility Bldg. to check on equipment shipment
10:30 Working on Record Log.

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11:00 Travel to Site #3
11:09 Break for Lunch
11:40 Finished Lunch and Traveled to UST Site #1
11:50 Arrived at Site #2 to perform Monitoring Well Sampling
12:00 Water Level Taken on Monitoring Well 873-001MW TS 6.64' and Depth was 10.89'
12:51 Finished sampling well
12:56 Leaving Site #2
1:00 Arrived at Utility Bldg. to Decon Equipment.
1:06 Arrived at Site #, 1 to sample Monitoring Well 591-001MW
1:10 Water Level on 591-001MW 16.37'
Total Well Depth - 30' to 29.31' to silt
2:00 Finished Purging Well

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2:01 Water Level - 16.61
PID Reading - Oppm
2:20 Finished Sampling Monitoring Well
2:21 Left Site #1
2:23 Arrived at ~~Site #~~ Utility Bldg
~~2:43~~ 2:34 Unpacked PID & LEL Meter and put on charge
3:02 Departing Utility Bldg.
3:03 Depart Base
3:14 Arrive at Fedex
3:24 Depart Fedex
3:38 Arrived at Hotel

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Depart Motel - 5:51

5:52 Arrive at Donny's for Meeting & Breakfast

6:35 Depart Donny's

6:51 Arrived at Base

6:52 Arrived at Utility Bldg.

7:10 Calibrate PIDs

7:30 Safety Meeting

7:40 Arrived at Site #1

7:41 Water Level Reading on 591-001MW 16.56' / PID-0ppm

7:49 Finished Decon Water Tape

7:58 Depart Site #1

8:06 Arrived at Site #3 to take Water Level on Monitoring Well

8:10 Water Level - 5.62
PID - 0ppm

8:11 Decon. Water Tape

8:16 Depart Site

8:18 Arrived at Site #2

8:25 Water Level - 6.7
PID - 1.5ppm

8:32 Arrived at Site #4 to purge & sample Monitoring Well

8-17-95

8:40 Decon Yuminated deep well pump & hose for purging

8:43 Started Purging Well

9:58 Finished purging and took deep well pump & hose to decon. Russell & Iris stayed to sample well.

10:30 ~~Samp~~ Set up to measure Monitoring Well MW4 Water Level and Organic Vapors. Water Level - 14.6' BLS; Depth to Bottom of Well - ~~24.61~~ 24.2'; PID Reading 1.5 w/ background of 0.3ppm

10:56 Finished Setting Up Deep Well with Alex from Huntington

10:58 Water Measurements on ~~59~~ 651-002MW
Temp-17.5°C
Conductivity-677
PH - 7.48

~~10:5~~ 11:05 First Pull Ground Water from Well MW4

8-17-95

11:13 First Sample
Temp - 23°C
Conductivity - 619
PH - 7.34

11:48 Finished Purging Monitoring MW-4

11:49 Break for Lunch

12:24 Returned to Site #4

12:33 PID Reading on 651-001MWA 6.6 ppm
Water Level Reading 2.94' BLS
Depth of Well - 13.1' BLS

12:35 Setting up to ~~purge~~ develop well

1:06 Finished purging Well # 651-001MWA

1:15 Water Level 4038

1:41 Finish Sampling Monitoring Well 651-001MWA

1:54 Departing Site #4

2:00 Arrived at Site #2

2:07 Installed Lock on plug at Site #2 MW and departed

8-17-95

2:15 Arrived at Utility Bldg & Started packing Equipment

4:15 Finished Packing Equipment

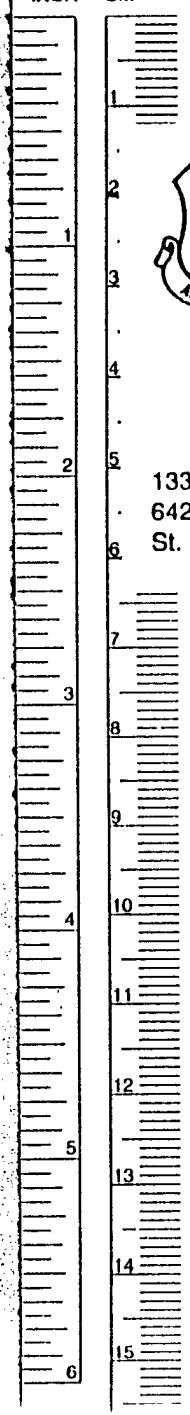
4:30 Departed Base

4:50 Arrived at Fedex

5:19 Departed Fedex

5:45 Arrived at Hotel

MEASUREMENT CONVERSIONS



IF YOU KNOW	MULTIPLY BY	TO FIND
LENGTH		
[illegible]	2.540	centimeters [illegible]entimeters
[illegible]	[illegible]	[illegible] ons (U.S.)
TEMPERATURE		
°C = (°F - 32) x .555		
°F = (°C x 1.8) + 32		

Inches	Decimals of foot	Milli-meters
1/16	.0052	1.5875
1/8	.0104	3.1750
3/16	.0156	4.7625
1/4	.0208	6.3500
5/16	.0260	7.9350
3/8	.0313	9.5250
1/2	.0417	12.700
5/8	.0521	15.875
3/4	.0625	19.050
7/8	.0729	22.225
1"	.0833	25.400
2"	.1667	50.800
3"	.2500	76.200
4"	.3333	101.60
5"	.4167	127.00
6"	.5000	152.40
7"	.5833	177.80
8"	.6667	203.20
9"	.7500	228.60
10"	.8333	254.00
11"	.9167	279.40
1 foot	1.0000	304.80

MINNESOTA
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CONTENTS

PAGE	REFERENCE	DATE

Project TEAM MEMBERS:

Project Mngr - Russell Cason
SHE Safety OFFICER - Jon Williams
GC Technician - Joe Byrd
DECON Tech - Iris Arredondo

Start date - July 31, 1995

- DRILLING TEAM:

Shane Bolden > Hunnington,
TOM White > Inc.

Decontamination Procedures are Located on page 11

Phone numbers:

- CAPT. Loren Hubert (ANGB Environ. Coodinator) — (612) 725-5038

- ANGB security
- Fire Department > 5600
- Medical
- Ambulance

- EMERgency ROOM
  Fairview Southdale Hospital
  6401 France Ave, South
  Edina, MN
  (612) 924-5151

Route to Hospital —

EXIT BASE on Minnehaha Ave, and proceed 0.6 miles to the Hwy 62 intersection, TURN (L) on Hwy 62 + proceed approx 7.5 miles to France Ave. TURN (L) on France Ave + proceed [illegible]

TURN (L) on 65th St. — follow signs at hospital entrance to Emergency Room.

Travel time from SITE: 10-15 mins in normal traffic.

AIR MONITORING ACTION LEVELS

>10ppm total VO VAPORS
STOP WORK — ventillate area.

>1ppm benzene

STOP WORK until Levels dissipate or ventilate area.

[signature]

④

Sunday

~~29~~ 30 July 1995 — Travel Day — DA

10:00 Leave home
11:00 Leave SA Airport
1900 Arrive at Hotel in Minneapolis, MN
20:00 END OF DAY

(5)

(Weather — cloudy & Rainy 70-75°)

DA

31 — 30 JUL 9

FIRST day at Base

0700-0800 Breakfast meeting (OFF-Base)
0800 — Pack car
0815 — Leave hotel
0830 — Arrive on Base
0835 — meet w/ Capt. Hubert
0900 — meet w/ "Dave" about utility locations.
1015 — Leave to Van rental (A & J Leasing)
1140 — Return from Van rental —
1150 Lunch (OFF Base)
1215 return to Base
1300 Take Russ & Jon to Lunch — (Dine to Rain)
1400 — Return to Base
1415 — meet w/ Dave & discuss GC Room & Equipment room set-up.

Run Begin [redacted] equipment

31 Jul 1995

1615 Finish unloading equipment Head-out to hotel

1630 Decide to go to store for supplies needed.

1730 Return to Hotel

1735 Unload needed equipment for deconing brass sleeves + caps

1900 Finished deconing sleeves will remain out to air dry

1915 Break for dinner (OFF-Base).

2000 return to finish wrapping sleeves

2100 End-of-Day

01 Aug 1995 —

Weather: Clear & bright

Temps: 70's

0500: wake-up - get ready to leave hotel at 0600.

0530: Load equipment to vehicles

0600: leave hotel for breakfast meeting at Base Dining hall.

0620: Arrive at Base Dining Hall (EAT BREAKFAST + have safety meeting

0655: Leave for BASE site location (work area)

0710: Begin unloading equipment. TO storage area to SORT.

0740: Begin loading specific equip — FOR JOB SITE.

0840: Filling eye wash station + getting site ready for work.

0930: Traveling to sites #1, 2, 3, + 4

10:00 — BACK to staging area

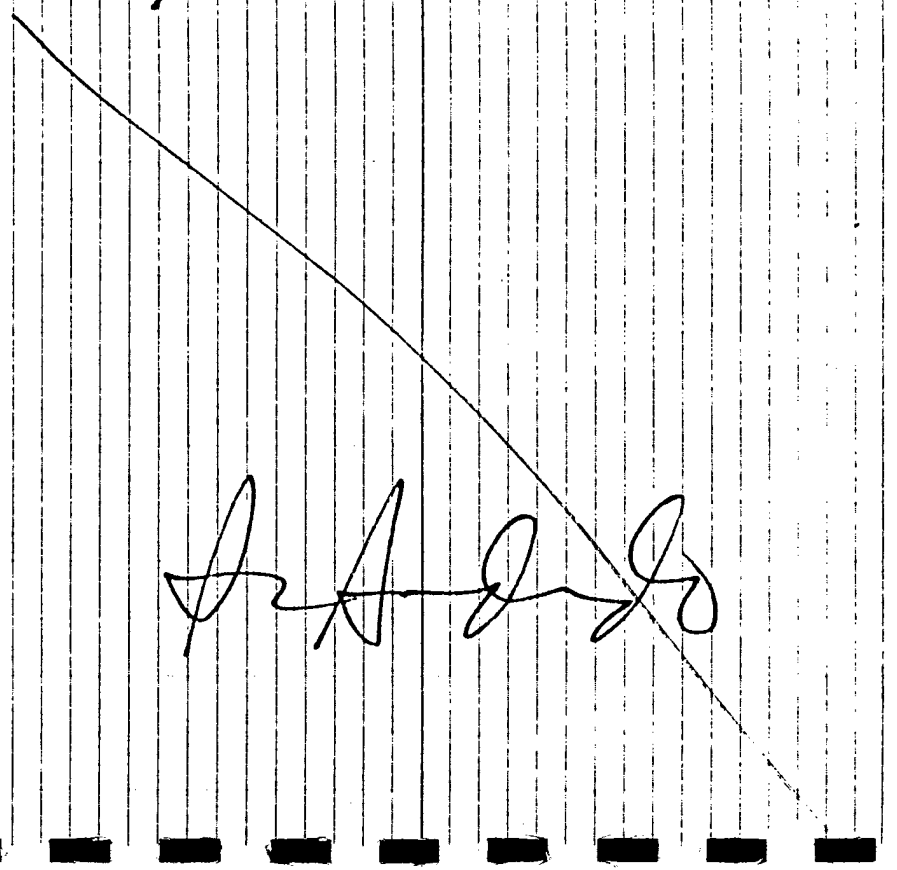
10:30 — TO a dry-run trip to FENEX to learn directions

8-1-95

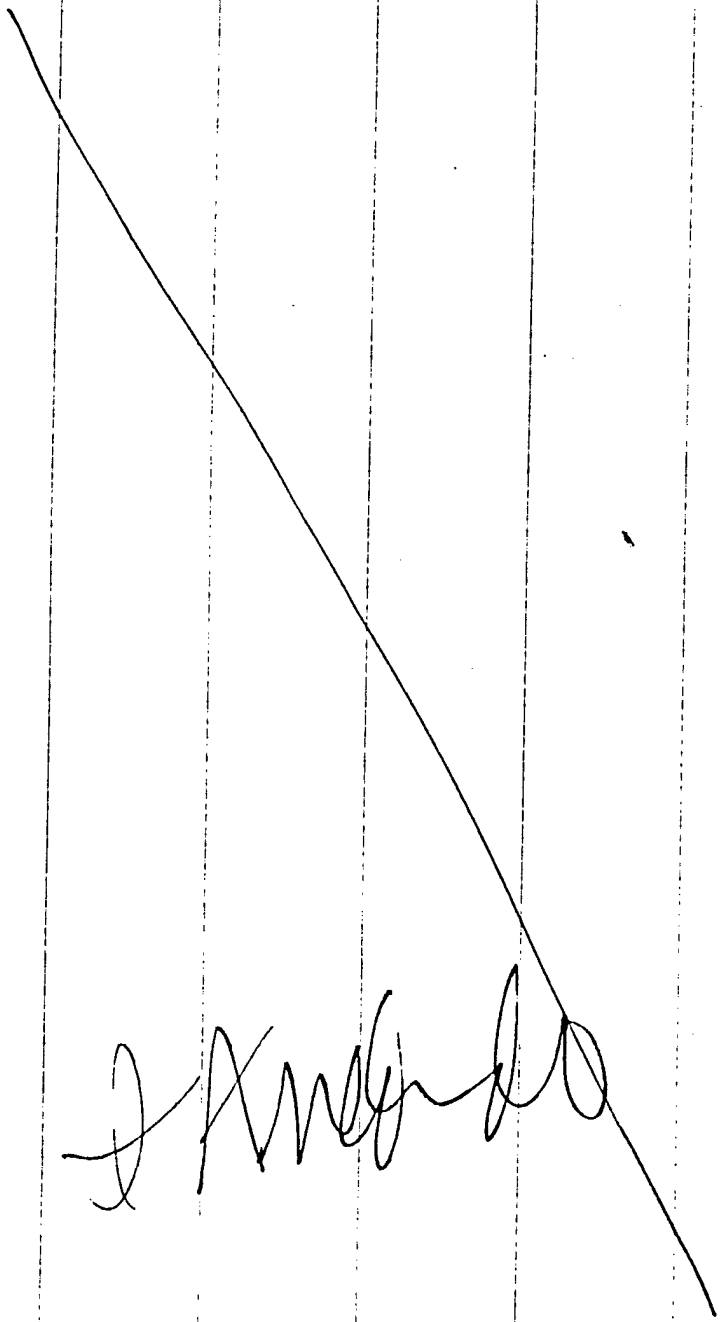
1145 Break for Lunch (on Base)
1215 - Drillers on site
1230 - set up decon tables
1300 - SAFety Meeting
1320 - Boring 651-001 BH started
1338 - Breathing zone at background area 0.00ppm
1348 - soil reading at 0.0ppm
1410 - Hit HSA refusal
1420 - Started drilling.
1430 - Began preparations for decontaminating split-spoons.
1515 Capt Hubert visits site
1518 Drillers went for cement to grout.
1530 Drillers return
1535 Commence clean-up at site
1600 Packing supplies in van for removal to utility shed.

8-1-95

1700 Removal of unnecessary equipment
1742 En route to FEDEX for drop off of samples
1800 Leave FEDEX to Target
1900 return to Hotel
— End of day —



08-01-95



08-01-95

Decontamination Procedures

In order to prevent cross-contamination, all non-dedicated (ie. split-spoons, augers, etc) will be decontaminated prior to use and between samples — using the following procedures:

Sampling equip. will be washed using a brush and Laboratory grade detergent (Alconox), followed by a rinse with potable water, then ASTM TYPE II reagent water, and pesticide-grade methanol.

Decontaminated sampling equipment will be allowed to air dry and will be wrapped in aluminum foil w/ the shiny side outward.

Wrapped equipment will be stored in such a manner as to reduce the potential for accidental contamination.

08-01-95

cont — (08-01-95)

Testing & monitoring equipment (probes, thermometers, etc) that come in contact w/ soil or water samples will be decontaminated by rinsing w/ ASTM TYPE II reagent water, & pesticide grade methanol. They will then be allowed to dry completely before being used again. This decon. procedure will be followed immediately after each use of the equipment. Polyethylene rope will be used to lower groundwater sampling equipment into the monitoring well.

Drilling & testing equipment (drilling equipment, augers, & split-spoon samplers) will be decon. prior to use & between bore hole/monitoring well installation.

~~Drillers~~ Likewise, all casing & screens installed in MW will be thoroughly

08-02-95

0500 - Wake up & prepare to leave for Breakfast meeting
0545 - Leave to Denny's for Breakfast meeting
0645 - Leave to Base area
0700 - Arrive at utility shed area to load equipment
0722 - Leave loading area to work site area
0725 - Arrive at site to Begin preparation for work — (Decon setting up)
0757 - Drillers Arrive
0800 - Begin work
0805 - Collecting sample Blanks
0815 + Field Blanks
0835 - Commence deconing split spoons from Driller — Decon procedure as per page 11-12 & 15.
1253 Break for Lunch (on-Base)
1338 return from Lunch — return to work

08-02-95

1445 – Drillers ~~Leave~~ STOP drilling & get ready to LEAVE SITE to TRUCK STATION DECON Area.

1445 – Commence cleaning Brass-sleeves & other MISC. Equipt.

1600 – BEGIN organizing & cleaning equipment to ready for the FOLLOWING day.

1737 – Arrive at utility shed area to check supplies.

1800 – END-OF-Day

(Cont.-8-01-95 Decon. Proc. section)

the wellbore. Equipt. will be moved to a site-specific decon area where the equipment will be thoroughly steam-cleaned. The decon. area will be located near site activities to reduce the potential spread of contamination and located upwind to reduce the chance of airborne contamination. *~~Water from decontamination~~ activities will be collected ~~and drummed, and handled as investigation derived waste.~~

The decon area will be located near site activities to reduce the potential spread of contamination and located upwind to reduce the chance of airborne contamination.

*(see changes in Sect 6.0. Workplan) ... spent decon water would be allowed to infiltrate soil at the site or aereated to paved surfaces to ...

08-03-95

*0630 – GO TO convience store to buy ice.

0500 – Wake up & prepare to leave for breakfast meeting (OFF-Base)
0645 – Leave to Base area.
0700 – Arrive at utility shed to begin prep. & go to JOB-site.
0730 Leave to WORK area.
0745 Begin to set up FOR work at drilling area
0805 – Sample Blanks (equipment)
0830 – Commence working at JOB site area.
0835 – SAFETY MEETING w/ JON.
1000 – FIELD Blank samples drawn for LAB
1008 – Continue deconning split spoons
11:15: Break for Lunch (on Base)
1135: Return to work
1600: prepare to leave site
1635: Arrive at utility shed to unload & prepare decon equipment for morning.
1705 Left base for hotel

08-04-95:

0500 – Wake up & prepare to leave for breakfast Meeting.
0545 Leave to Denny's for Breakfast meeting.
0639 Leave to Base
0653 Arrive at utility shed to load equipment for SITE area.
0715 – Leave utility shed for SITE WORK area.
0717 – Arrive & prepare to set up equipment for JOB site.
0825 – SAFETY meeting
0835 – Prepare to begin work.
0910 – started to rain – all work stops. Want to "contact club" to get OUT of the rain. Awaiting further details on weather from Project Manager.
1115 – Break For Lunch
1135 – Return from Lunch to resume work – (Rain has stopped) (SITE No 4)
1145 – Drillers start setting well

08-04-95

1402: Drillers Finished Cement layer

1410: Drillers Leave SITE No. 4 to decon equipt. (Augers, etc)

1500: Started to Load equipment in van — Work had to be stopped due to rain.

1530: return to utility shed to unload equipment.

1600: prepare to leave Base

1620: Arrive at Hotel End-of-day

08-05-95

0500: Wake up & prepare to meet for breakfast.

0645 - Prepare to head out to base

0655 - arrive at Base Utility shed to Load equipment

0715 - Prepare to Move out to SITE NO 4 for JOB SITE

0730 - ARRIVE at JOB SITE to Begin work.

0750 - Drillers arrive from Decanting their equipt.

0800 - Begin to set up decon equip & project Mngr. arrive.

0815 - Drilling begins

11:00 - Drillers stop for the Day & Leave SITE.

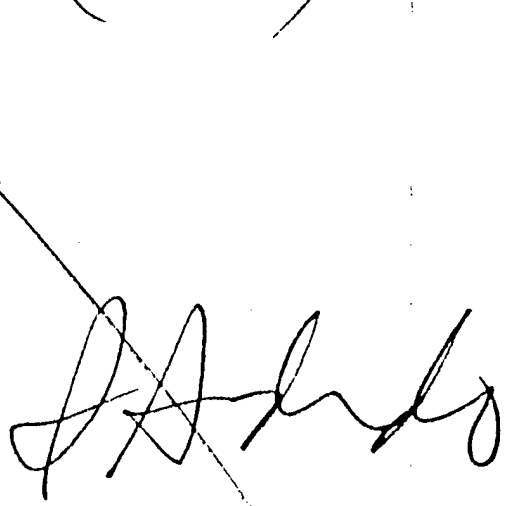
11:05 Return to Utility shed to unload equipment for storage

11:30 - Leave to Target & Builders square to Buy supplies

08-06-95 - SUN

Day - OFF

(Rest)



08-07-95

0500 - Wake up & prepare to meet for breakfast meeting.
0630 - Prepare to leave to Base.
0700 - Begin set-up procedures for decon area at site (Load equipt from Utility sh
0800 - Drillers arrive from decon truck area
0815 - Safety meeting w/ Jon Williams
0830 - Begin decoming equipment
1245 - Break for Lunch - (DRILLERS + OPTECH)
1315 - Return from Lunch
1317 - Jon & I get new decon wash & rinse water
1320 - Drillers begin drilling 3rd hole
1321 - Decon procedures begin.
1345 - Drillers leave site to decon

08-07-95

(cont) 1345: their truck and equipment.
1440: Drillers return to continue working
1445: Begin setting-up for decon procedures.
1630: Drillers leave area for end-of-day. (Drillers leave to decon equipment on truck)
1632: Begin preparing equipment to leave job site area.
1633: ALL equipment is cleaned & wrapped & organized for following day's work.
1700 – Arrive at Utility shed area to check on supplies.
1730 – Leave base to return to Hotel. (End-of-day)

08-08-95:

0500 – Wake up & prepare to meet for breakfast meeting at Denny's
0630 – Leave Denny's to base area.
0645 – Arrive at Base Utility shed to Load & sort needed equipment.
0730 – Leave to site #1. to begin work.
0731 – Drillers arrive From decon area & make preparations for drilling.
0732 – Begin to set-up tables & equipment for decon procedures.
0817 – Safety meeting w/ Jon
0820 – Drillers begin drilling.
0935 – Drillers stop — Begin setting MW
0936 – Continue decanning split-spoons for use
1110 – Break for Lunch

08-08-95

1210 Return from Lunch
1211 Begin to ready split-spoons and other equipment to move to new site location.
1249 – completed loading equipment and auditing instruction from Ross. (Proj. Mngr).
1320 Arrive at site 2 to begin set-up for decanning 1 bore hole.
1345 Drillers return from decon. truck & equipment.
1346 Begin selecting site and Doping-off area for drillers
1432 Begin decanning.
1615 Drillers leave site for end-of-day. Begin to break-down decon. equipment for end-of-day.
1630 LOAD Equipment on Van.
1645 Leave Base for home.

08-09-95

0500 – Wake up & prepare to meet for breakfast meeting at
0630 – left Denny's Restaurant
0640 – stop at convenience store for ice and sandwiches (for lunch)
0710 – Arrived at Base
0715 – Arrived at Utility Bldg to load & unload equipment
0731 – Arrived at Site No. 2
0815 – safety meeting w/ Sue
0820 – Finished set-up & drillers started drilling. – Begin decanning drilling equipment.
0900 – Drillers stop drilling to move to another bore hole –
Drillers leave to decon equipment & truck. *EQ Blank Taken*
0930 – Drillers arrive to continue working at site.
1100 – Break down equipment and get ready to move to next site.

8-9-95:

1124 Break for Lunch – Return to Utility shed.
1204 Return to site #2 – to clean up site area.
1224 Arrive at site #3
1300 – Finish setting up decon + sampling tables
1315 – Drillers arrive at site #3
1316 – Safety meeting w/ Jon
~~1320 – Equipment Blank~~ *
1324 – Finish safety meeting + started drilling
1325 – Begin decon procedures on sampling spoons.
1415 – Drillers move to next borehole.
1440 – FIELD Blank taken
1450 – Continue decon procedures
1630 – wash down site No. 3.
1735 – leave site to utility shed to unload + inventory equipment
1836 Leave utility shed for Hotel

End-of-day

08-10-95

0500 Wake up + prepare to meet for breakfast meeting at Denny's.
0630 – Leave to go to convience store for ice + sandwiches.
0645 – Leave store to go to Base
0700 – Arrive at utility shed to Load ice chests + prepare to leave to site #3.
0734 – leave to site #3 to set-up + prepare site for work.
0736 – Arrive at site #3 to set up + prepare for work.
0800 – Drillers arrive
0815 – Safety meeting w/ Jon
0823 – Start drilling – + prepare to decon.
0824 – Deconning sampling equipment...
0938 – Collected (top) water sample at "contact club faucet."
1115 Break for Lunch
1145 Return from Lunch

08-10-95

1200 - Drillers preparing to set monitor well
1230 Russ explains the procedure for setting a monitor well —
1330 - Russ & John leave site #3 to check on other sites.
I stay on to supervise/watch drillers complete well.
(24)
1530 - Drillers finish breaking up asphalt square — They will now begin mixing concrete.
1600 Drillers pour cement & form mold for MW.
1630 Drillers Finish with MW mold & move on to another borehole to remove the auger & add grout.
1735 - Leave site #3 for Hotel — End-of-day —

08-11-95

0500 - Wake up & prepare to meet for breakfast at Denny's
0645 - Leave to go to Base
0700 - Arrive at utility shed to check on supplies
0735 - Arrive at site No. 2 to unload & set up decon area.
0800 - Russ decides to abandon drilling at site today, due to imminent storm front. (Return to utility shed.)
Weather: Windy, cloudy, dark w/ minor drizzles
0820 - started to rain — Hard! (thunder, Lighting, high winds)
0900 - still raining — intermittent showers hard-to-slow-to-hard.
0920 - rain slowed to drizzle — Russ leaves utility shed to go check site.

08-11-95

~~08-12-95~~ ~~AA~~

0931 – leave utility shed area to site #2 to drill MW. (Drillers will meet us there).
0939 Arrive at site #02 & will start to unload equipment & prepare for decon activities.
1007 – safety meeting w/Jon
1008 – Begin decon'ing duties.
1045 – stopped drilling – due to weather conditions. (Rain)
1100 – Resume drilling activities & resume decon activities (includes re-setting up equipment & etc.)

~~#45~~ (44)
1123 – STop drilling – Break for Lunch. Russ & Jon go to Lunch on Base. I remain at site to finish decon'ing equip.

08-11-95

1146 – Break for Lunch / Russ returns to site /
1215 Return from lunch
1216 Continue decon'ing equipment since there will be no more sampling at this site; split spoons will be wrapped in ALUM. Foil and decon area will be loaded onto the van. Site area will be cleaned and left W/O trash.
1255 – Awaiting on movement to next site #4 – Russ will inform us when he is ready to go.
1256 Drillers preparing to go to decon area to clean equip. on truck – Russ, Jon, & I finish cleaning site area.
1350 – Drillers arrive at site #4 and prepare to use air-Drill on Casing.

08-11-95:

Office; They plan to return with equipment needed so that the well can be set. (DRILL BIT did not fit)

1434 – AWAITING further instructions from Russ.

1435 – Jon leaves site to pick-up bailers — & will decon them when he returns.

1520 – TOOK time out to decon. bailers, while waiting for drillers to return.

1541 – Drillers return w/ correct drill bit.

1542 – Begin to drill into bedrock.

1600 – Begin to decon glass jars (sample jars)

1645 – Drill hits water zone

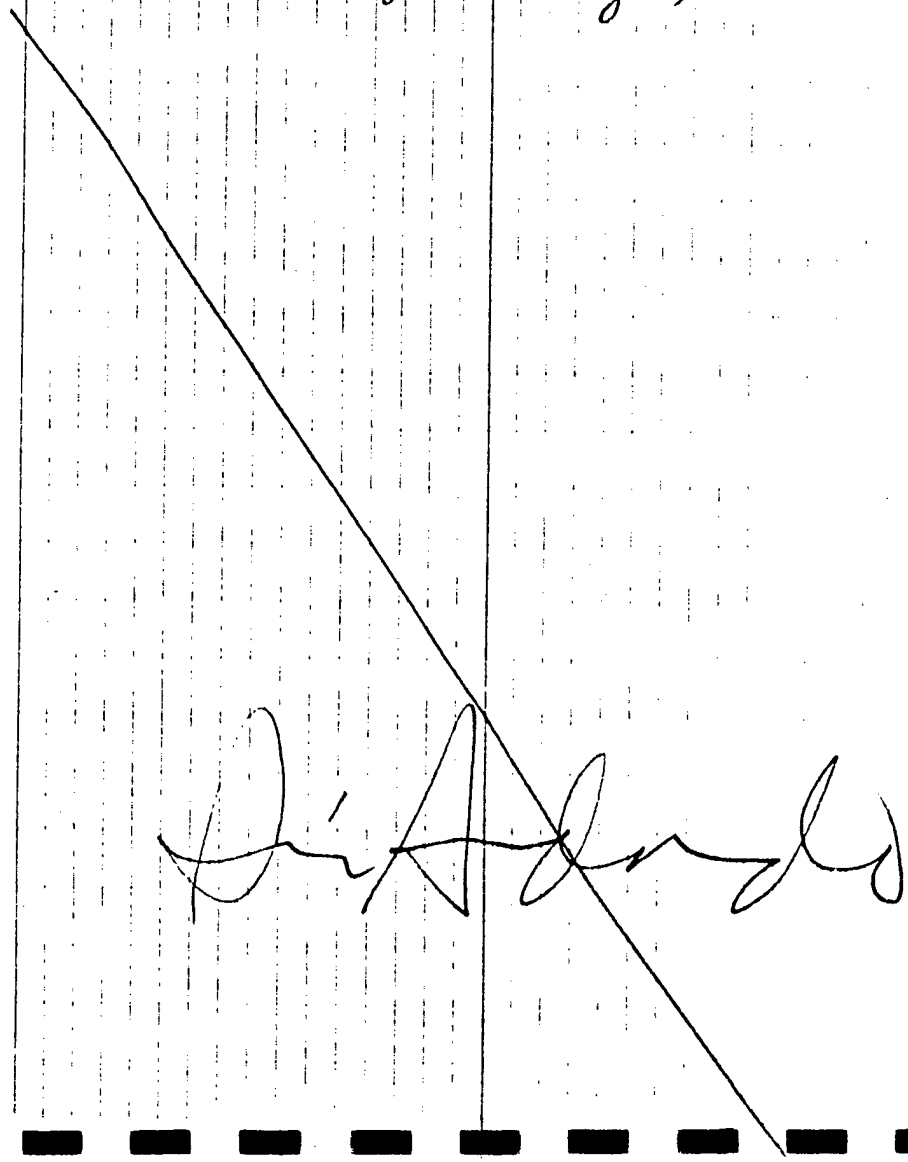
1654 – Russ collects water sample.

1724 – Drillers stop drilling. Equipment is loaded + we prepare to go to utility shed (Loft site)

08-11-95

1731 – Arrive at Utility shed

1800 – Leave utility shed to head back to Hotel (End-of-day)



08-12-95

0600 Wake up & prepare to meet at Denny's for breakfast meeting
0718 - Leave Denny's to head out to Base.
0731 - Arrive at Base Utility shed to Load needed equipment.
0845 Arrived at site 4 to development g-well by bailing
0910 - stopped due to rain shower. Will continue once rain stops.
0928 Resume bailing - rain has stopped.
1004 - stopped bailing due to rain. Will resume when rain stops.
1014 - Resume bailing rain has stopped
1035 - stopped bailing - it has started to rain again.

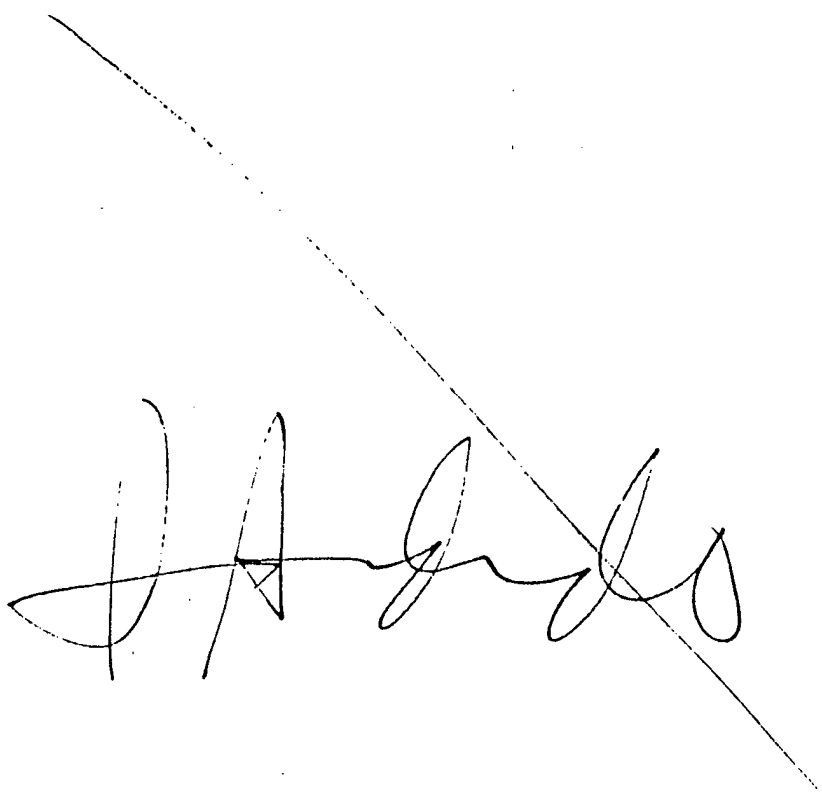
08-12-95

Russ has decided to call it a day, due to rainy weather & lighting. We will resume bailing on Monday.
1050 - Preparing to leave site No. 4 & Base.
1055 - Arrive at utility shed to unload van.
11:05 - Leave Base to head for Hotel.
- End of day -

08-13-95

(Sunday)

Rest



08-14-95

0500 - Wake up & prepare to meet for breakfast at Denny's.
0630 Leave Denny's to Base.
0650 Arrive at Base Utility shed to load equipment for bailing (Developing the well)
0735 Leave shed to go to site #3 with Joe. (well-develop)
0918 - Finished developing well from site NO. 3 (near AC apron)
0924 - Stop by site NO. 1, to check with Russ on further instructions
0933 - Leave to Utility shed to decon used bailers & Joe will call Hm3 co about Hydrk.
0957 - Leave Utility shed to go to site NO. 4, to begin Well development w/ Joe.
1045 Finished well development w Joe. Going to stop by site NO. 1, to check w/ Russ for further instructions

08-14-95

1111 Arrive at utility shed to decon bailer used & water level indicator.
1123 Break for Lunch
1152 Return from Lunch
1155 Stop by site #1, to talk w/ Russ about further instructions — Also, pick-up water level indicator.
1201 - Return to utility shed to decon water level indicator.
1224 Finish deconning equipment & moving to site No. to develop well with Joe.
1326 Finish developing well. Will head back to site#1 to talk w/ Russ for further instructions.
1346 - Russ instructed us to go back to utility shed to decon equipment & Joe need to get started,

08-14-95

on GC sample runs.
1420 — Went over to site #1 to talk w/ Russ. He instructed me to stay with him to take site measurements.
1520 Russ & I went over to site No. 3 to take measurements there.
1620 Head back to utility shed to organize equipment.
1700 Leave utility shed at Base to go to FEDEX to drop-off a package.
1730 — Arrive at Hotel — End-of-day —

0815-95

0600 - Wake up & prepare to meet at Denny's for breakfast meeting.
0650 - Arrive at Denny's
0736 - Leave Denny's to Base
0753 Arrive at Utility shed to Load equipment
0905 Go with Russ & Jon to look for drillers.
0920 - Drive over to site NO1, NO, 3, & NO.4 to do surface completions.
1000 Arrive back to utility shed to await further instructions
1100 meet w/ "Alex" from Huntindon (Geologist) (He will be developing the wells for us)
1105 - Breaks for Lunch
1145 - Return from Lunch
1146 - enroute to site #1 for well-development.
1210 Arrive at site #1

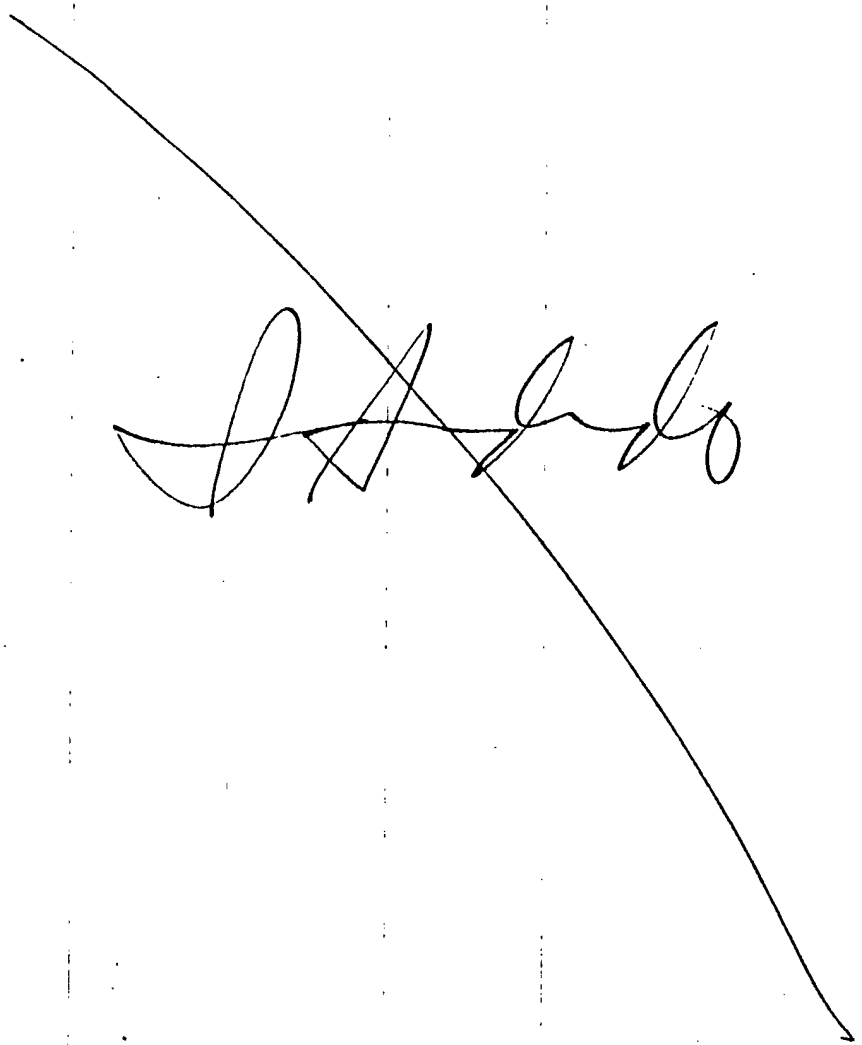
08-15-95

1215 - Start making preparations for decon procedure.
1220 - Safety meeting w/ Jon.
1226 - End safety meeting w/ Jon.
1227 - Start well-development (Alex Chinn does development)
1345 - Finished well-development
1346 - Begin breaking down area to move to new site.
1400 - Arrive at site #4 to begin development of well.
Present: Alex Chinn, Jon, Joe + me
1430 - Well development begins.
1540 - Well development ends.
1541 - Begin breaking down site to load in Jon. Equipment will be returned to utility shed.
1610 Arrive at utility shed
1611 Prepare Hazco Hydak that needs to be Returned, (Will ship via Fed EX.)
1612 Leave to Fed EX with Joe.
1620 Arrive at Fed EX to drop

08-15-95

1625 - Leave Fed EX to Hotel (End-of-Day!)

1645 Arrive at Hotel



08-16-95

0500 - Wake up + prepare to meet for breakfast at Denny's.

0639 Prepare to leave Denny's to go to Base.

0656 Arrive at Base Utility shed.

0657 Begin decanning + prepare equipment to use today.

0730 - Go by mess-hall to get ice in cooler. (for coolers)

0732 Return from mess-hall.

0845 Went with Joe to pick up packages from FEDEX.

0850 - Van needed gas

0858 - Arrive at FEDEX.

0900 - Leave FEDEX to office.

0915 - arrive at Builders square to buy supplies needed.

0940 - Leave Builders Square to go back to Utility Shed at Base.

0950 - GO TO site no. 3 (near A/C pond) to develop well.

08-16-95

1000 Joe starts to develop well.
1050 - Joe Finished developing well. We are going to prepare to take sample.
1100 Taking 801-001 MW sample for Lab.
1115 Taking 801-001 MW MS/MSD sample
1128 Finished taking MS/MSD sample. Load equipment on Van. Prepare to go to utility shed for decanning equipment.
1145 - Break for Lunch
1210 Return from Lunch
1211 - Meet Russ & Joe at site NO. 2, Russ begins to develop the well.
1245 - Russ Finished developing & sampling well.
1246 - Move to utility shed to clean equipment.

08-16-95

1250: Move to site NO. 1 to develop well.
1300: Arrive at site NO 1 & prepare equipment to begin developing.
1315: Begin bailing
1415: End bailing, Prepare to leave to utility shed.
1416: Arrive at shed; begin decanning equipment.
1455: Finish decanning equipment. prepare to leave Base.
1506 - Leave Base to go to FedEx to drop off samples.
1515 Arrive at FedEx; relinquish samples.
1527 Leave to return to Hotel.
1538 Arrive at Hotel.
End-of-day

08-17-95

0500 - Wake up & prepare to meet at Denny's for breakfast.
0630 - Leave Denny's for Base.
0650 - Arrive at Base Utility shed to load necessary equipment for sampling.
0730 - Safety meeting w/ Jon.
0737 - Finish safety meeting with Jon.
0738 - Prepare to move out to UST site No. 1, to take a water level measurement
0750 - Finished taking measurement Awaiting further instructions.
0806 - Arrive at site no 3 to take water level measurement. (5.62')
0815 - Finished taking measurement.

08-17-95

0817 - Prepare to move out to site No. 2 to take water level measurement. (6.70')
0830 - Finished taking measurement; move to
0831 - prepare to move to site No. 4 ~~651-002 MW #4~~ ~~651-001 MWA #4~~ Water level measurement = 651-002 MW:
0854 - Finished taking measurement; prepare to bail & sample well. Alex Chinn (Huntingdon) will purge well w/ pump.
0930 - Finished purging well.
0945 - Took conductivity, pH, temp reading for sampling
1015 - Took sample for 651-002 MW. (w/ Russ)
1059 - Finished -
1100 - Took Equipment Blanks with Russ.

8-17-95

1115 - TOOK 651-003MW ~~samples~~ of Equipment blank sample.

1134 - Move to MW-4 to collect samples.

1200 - TOOK SAmples of

1220 Finished taking samples

1232 Begin setting up to purge 651-001MWA well. Jon will purge the well.

1240 - Break for Lunch w/ Russ on Bac.

1310 - Return from Lunch.

1314 - Begin develping well

1545 Finished developing well.

1557 - Break down site. to return to utility shed.

1613 - Arrive at Utility shed to unload equipment and prepare to do final packing.

08-17-95

(24)

~~1830~~ 1630 Finishing up packing equipment + supplies

~~1835~~ 1635 - Leave utility room and go over to decon area (where trucks cleaned drilling rig equipment).

1638 - Leave Base (Jon, Russ + me) And go to FedEx to mail samples + supplies.

1710 - Arrive at Fedex to drop of equipment, supplies + samples.

1719 - Finish dropping off all samples + equipment at Fedex. Will return to hotel now.

1730 Arrive at Hotel End of day

08-18-95

0600 - Wake up & prepare to meet to go to Base for "Final" Check.

0700 - Leave to Base

0720 - Arrive at Base Utility shed

0725 - Drive around all 4 sites to check for cleanliness & ck. Locks.

0830 - Finished checking all sites.

0831 - Got turned in Utility room key to Civil Engineering.

0835 - Stop by to see Capt. Hubert for final goodbye.

0845 - Finished with company business. Plan to go by Plane Museum to visit.

08-18-95

0920 - Return to hotel to prepare to leave.

1000 - Got returns van to H & J rental personnel at hotel.

1030 - Check out of hotel & prepare to leave to airport via shuttle.

1100 - Arrive at airport. Plane departs to Houston at 12 noon.

12noon - Travel to Houston.

1530 - Travel to San Antonio

1700 - Arrive late to San Antonio (due to airline delay).

1730 - Pick up Luggage

1830 - Arrive home

End-of-day

Final Entry for MN Trip (7/30-8/18)

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APPENDIX F

MONITORING WELL DEVELOPMENT, PURGING, AND SAMPLING LOGS

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AIR NATIONAL GUARD BASE

WELL DEVELOPMENT LOG

Monitoring Well: 651-001MWA

Development Start: (Date) 8-12-95 (Time) 0837

Development End : (Date) _____ (Time) _____

Developed By : Russ Cason, Iris Arredondo

PID Reading : (Background) ~~5.8~~ 0 ppm (Reading) 5.8 ppm

Groundwater : (Water Level) 3.39 fbls (Well Depth) 14.0 fbls = 10.61' water

Volume of Water in the Well:

$V_{(gal)}$ = [0.0408] x [Well Diameter$_{(inches)}$ 4 ⓟ] x [Height of Water in Well$_{(feet)}$ 10.61]

$V_{(gal)}$ = 1.73 GAL

$V_{(gal)}$ x 3 = 5.19

Development Method : Bailer Containment : Steel D.O.T. 55-gal Drum

Average Rate of Removal of Water : _____ gal/min.

Weather :

Comments :

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity
0902	2.5	71	7.12	755	Turbid
0905	5	68.3	7.0	748	"
0932	7.5	68.2	7.38	714	"
0936	10.0	67.2	7.52	686	"
0942	12.5	66.2	7.88	630	"
0949	15.0	64.5	7.98	594	"
0959	17.5	65.7	8.20	643	
1004	20.0	66.4	9.3	658	
	Stopped due to Rain and T-storms				
	Continued on 14 Aug 95.				
	J Byrd JR				

AIR NATIONAL GUARD BASE

WELL DEVELOPMENT LOG

Monitoring Well: 651-001 MWA

Development Start: (Date) 14 Aug 95 (Time) 1228

Development End : (Date) 14 Aug 95 (Time) 1318

Developed By : J. Byrd, I. Arredondo

PID Reading : (Background) 0.0 ppm (Reading) 0.0

Groundwater : (Water Level) 2.72 ~~fbls~~ fbTOC (Well Depth) 12.82 ~~fbls~~ fbTOC

Volume of Water in the Well: 1.65 gal

$V_{(gal)}$ = [0.0408] x [Well Diameter$_{(inches)}$]^2 x [Height of Water in Well$_{(feet)}$]

$V_{(gal)}$ = (0.0408)(4)(10.1') = 1.65 gal

$V_{(gal)}$ x 3 = 5 gal

Development Method : Bailer Containment : Steel D.O.T. 55-gal Drum

Average Rate of Removal of Water : _____ gal/min.

Weather : Sunny, Breezy, 70's

Comments : This is a continuation of development that was started on Saturday 12 aug 95, and stopped due to rain.

Time	Amount of Water Removed (gallons)	Temperature (°C) °F	pH	Conductivity (uS/cm)	Clarity
1239	22.5	70.2	7.06	6.27	Cloudy
1241	25.0	65.5	6.85	6.25	cloudy
1244	27.5	66.7	6.76	6.66	Cloudy
1246	30.0	65.5	6.83	6.74	Cloudy
1251	32.5	65.2	6.93	6.42	cloudy
1256	35.0	66.2	7.02	6.16	Cloudy
1304	37.5	66.4	6.92	6.55	Cloudy
1311	40.0	65.0	7.18	6.69	cloudy

WELL PURGING LOG

Installation:
Client/Project:
Well No. 651-001mwA
Site:
Purge Start: (Date) 8-17-95 (Time) 1232
Purge End: (Date) (Time)
Purged By:
Background PID Reading: 1.5
PID Reading: 6.6 ppm
Depth to Water (BTOC): 2.94'
Depth to Bottom of Well (BTOC): 13.10
Volume of Water in Well (gallons) = (0.0408) x (well diameter (inches)^2) x height of water column (feet) = 1.66

$2^2 = 4$ 10.16

Volume of Water in Well x 3 = 4.98 Gallons

Purge method: Teflon Bailer
Purge Water Containment:
Average Rate of Removal of Water:
Weather:

Comments:

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
12:48	1	18.4	7.57	639	Cloudy	
12:59	5	18.0	7.62	686	Cloudy	
1308	+0.6	17.9	7.58	676		

WELL SAMPLING LOG

Installation: Well No. 651-001MWA
Client/Project: Site:
Sample Start: (Date) 8-17-95 (Time) ~~1315 Est.~~ 1315
Sample End: (Date) (Time) 1337
Sampled By:
Background PID Reading: PID Reading:
Depth to Water (BTOC): ~~2.~~ 4.38 @ 1310 1315 4.34
Screen Interval: 5-14
Sampling method:
Sampling Equipment Decontamination method:

Lab Analyses: VOCs (8240) TPH (GRO DRO) (WDNR mod.)
TOTAL LEAD SW 8010

QA/QC Samples: 651-GW-Dup Coll. From 651-001MWA

Weather: PTLY Cloudy, Low 80s

Comments:

Time	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
1315	17.4	7.56	669	CLAY	
1337	17.6	7.53	679	"	

AIR NATIONAL GUARD BASE

WELL DEVELOPMENT LOG

Monitoring Well: 801-001 mw

Development Start: (Date) 14 Aug 95 (Time) 0740

Development End : (Date) 14 AUG 95 (Time) 0907

Developed By : J. Byrd, I. ARREDONDO

PID Reading : (Background) 0.0 ppm (Reading) 0.0

Groundwater : (Water Level) 5.58' ~~fbls~~ BTOC JB (Well Depth) 10.77 ~~fbls~~ BTOC JB

Volume of Water in the Well:

$V_{(gal)}$ = [0.0408] x [Well Diameter$_{(inches)}^2$] x [Height of Water in Well$_{(feet)}$]

$V_{(gal)}$ = (0.0408) (4) (5.19 ft) = 0.85 (gal)

$V_{(gal)}$ x 3 = 2.5 gal

Development Method : Bailer Containment : Steel D.O.T. 55-gal Drum

Average Rate of Removal of Water : 0.4 gal/min.

Weather : Sunny, Breezy, 70's

Comments : Bottom of well is 11' BIS, Top of screen is 4' BIS

Time	Amount of Water Removed (gallons)	Temperature ~~(°C)~~ °F	pH (X100)	Conductivity (uS/cm) (X100)	Clarity
0753	2.5	72.5	7.74	6.82	Cloudy
0800	5.0	69.9	7.29	6.50	Cloudy
0806	7.5	70.4	7.13	6.34	Cloudy
0810	10.0	70.1	6.55	6.37	Cloudy
0817	12.5	69.8	6.07	6.58	Cloudy
0822	15.0	69.6	6.40	6.67	Cloudy
→ 0838	17.5	69.7	7.28	6.64	Cloudy
0843	20.0	69.9	7.87	6.70	Cloudy
0850	22.5	69.9	7.03	6.70	Cloudy
0855	25.0	70.3	7.03	6.90	Cloudy
0902	27.5	70.2	7.08	6.85	Cloudy

Recal pH due to 7-4

(well on Flight Line)

WELL PURGING LOG

Installation: Minneapolis ANGB Well No. 801-001 MW
Client/Project: Site:
Purge Start: (Date) 16 AUG 95 (Time) 1030
Purge End: (Date) 16 AUG 95 (Time) 1048
Purged By: JByrd, I. Arredondo
Background PID Reading: 0.0 PID Reading: 0.0
Depth to Water (BTOC): 5.57' Depth to Bottom of Well (BTOC): 10.90'
Volume of Water in Well (gallons) = (0.0408) x (well diameter (inches))² x height of water column (feet) (5.33') (0.0408)(4) = 0.87 gal

Volume of Water in Well x 3 = 2.6 gal

Purge method: PVC BAILER
Purge Water Containment:
Average Rate of Removal of Water: 0.28 gal/min
Weather: Cloudy, 70's

Comments:

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
1041	1	23.5	6.86	716	Cloudy	
1043	2	23.3	7.00	717	cloudy	
1044	3	23.0	7.04	713	cloudy	
1046	4	22.6	7.03	709	cloudy	
1047	5	21.8	7.11	701	cloudy	
	6					
	7					
	8					

WELL SAMPLING LOG

Installation: Minneapolis AW6B
Well No. 801-001MW
Client/Project:
Site:
Sample Start: (Date) 16 Aug 95 (Time) 1100
Sample End: (Date) 16 Aug 95 (Time) 1125
Sampled By: J Byrd, I. Arredondo
Background PID Reading: 0.0
PID Reading: 0.0
Depth to Water (BTOC): 5.48'
Screen Interval:
Sampling method: Teflon Bailer
Sampling Equipment Decontamination method: Liquinox, Potable water rinse, DI H2O rinse, methanol

Lab Analyses:

VOC-SW8270

TPH-DRO WDNR

QA/QC Samples:

801-001MW VOC-SW870
MS/MSD [redacted]-DRO WDNR

Weather: Cloudy, 70's

Comments:

Time	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
1104	23.0	6.82	703	Slightly Cldy	
1110	23.2	7.03	706	Slightly Cldy	

AIR NATIONAL GUARD BASE

WELL DEVELOPMENT LOG

Monitoring Well: 873-001mw

Development Start: (Date) 14 Aug 95 (Time) 1002

Development End : (Date) 14 Aug 95 (Time) 1045

Developed By : I. Arredondo, J. Byrd

PID Reading : (Background) 0.0 ppm (Reading) 0.0

Groundwater : (Water Level) 8.98 ~~fbls~~ BTOC (Well Depth) 10 R.C. 12.82 ~~fbls~~ BTOC

Volume of Water in the Well: 0.63 gal

$V_{(gal)}$ = [0.0408] x [Well Diameter$_{(inches)}^2$] x [Height of Water in Well$_{(feet)}$]

$V_{(gal)}$ = (0.0408)(4)(3.84') = 0.63 gal

$V_{(gal)}$ x 3 = 1.9 gal

Development Method : Bailer Containment : Steel D.O.T. 55-gal Drum

Average Rate of Removal of Water : 0.52 gal/min.

Weather : Sunny, Breezy, 70's

Comments : Bottom of well at 10.1' BIS, Top of screen @ 4' BIS
Well ~~have~~ has not been surface completed. Casing is about 4.5' above ground level.

Time	Amount of Water Removed (gallons)	Temperature (°C) °F	pH	Conductivity (uS/cm)	Clarity
10:11	2.5	69.3	7.53	6.71	Cloudy
10:14	5.0	66.0	7.44	6.78	Cloudy
10:17	7.5	64.3	7.09	7.70	Cloudy
1023	10.0	66.2	7.35	7.68	Cloudy
1026	12.5	63.6	7.14	7.77	Cloudy
1030	15.0	64.6	7.05	7.92	Cloudy
1033	17.5	63.3	6.89	7.80	Cloudy
1035	20.0	62.7	6.78	7.82	Cloudy
1039	22.5	63.1	6.81	7.67	Cloudy
	25.0				

WELL PURGING LOG

Installation: Minneapolis ANGB — Well No. 873-001 mw
Client/Project: ANGRC 13153193 — Site: UST Site No. 2
Purge Start: (Date) 8-16-95 (Time) 1212
Purge End: (Date) 8-16-95 (Time) 1223
Purged By: R. Cason, J Wellman, J Byrd
Background PID Reading: 0 — PID Reading: 0
Depth to Water (BTOC): 6.64' — Depth to Bottom of Well (BTOC): 10.89'
Volume of Water in Well (gallons) = (0.0408) x (well diameter (inches))^2 x height of water column (feet) — ~~4²~~ 6 2^2=4 — 4.25

Volume of Water in Well x 3 = 2.07 Gallons

Purge method: Teflon Bailer
Purge Water Containment:
Average Rate of Removal of Water:
Weather: Cloudy w/ a few T-showers in area

Comments: No silt on bottom indicated.
1 well volume = 0.69 Gal.

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
1214	1	17.7	6.73	754	Cloudy	
1217	2	17.3	7.01	738	"	
1220	3	17.1	7.04	741	"	
1222	4	17.0	6.97	741	"	
	5					
	6					

WELL SAMPLING LOG

Installation: Minneapolis AWGB Well No. 873-091MW
Client/Project: Site:
Sample Start: (Date) 8-16-95 (Time)
Sample End: (Date) (Time)
Sampled By: JByrd, R. Cuson, JWilliam
Background PID Reading: 0.0 PID Reading: 0.0
Depth to Water (BTOC): 6.70'
Screen Interval:
Sampling method: Teflon Bailer
Sampling Equipment Decontamination method:
Liquinox, Potable Water Rinse, DI H2O Water Rinse, Methanol

Lab Analyses:

VOC - SW8240
TPH - DRO WDNR

QA/QC Samples:

873-GW-FB

Weather: Misty

Comments:

Time	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
1234	17.7	7.01	754	slightly cldy	
1242	17.7	7.12	767	slightly cldy	

AIR NATIONAL GUARD BASE

WELL DEVELOPMENT LOG

Monitoring Well: 591-001mw

Development Start: (Date) 8-15-95 (Time) 1205

Development End : (Date) 8-15-95 (Time) 1245

Developed By : Russ Cason and Alex Chinn (maxim)

PID Reading : (Background) 0 ppm (Reading) 0

Groundwater : (Water Level) 16.58' fbls (Well Depth) ~~30~~ 29.5' fbls (=6" LS mw10) = 30

Volume of Water in the Well:

$V_{(gal)}$ = [0.0408] x [Well Diameter$_{(inches)}$ 4"] x [Height of Water in Well$_{(feet)}$] 30'-16.58' = 13.42'

$V_{(gal)}$ = 8.76

$V_{(gal)}$ x 3 = 26.28 gal.

Development Method : Bailer & SS SUB Pump Containment : Steel D.O.T. 55-gal Drum

Average Rate of Removal of Water : _____ gal/min.

Weather : Clear, Low 80s

Comments : Developed 40 gals water slight.

Time	Amount of Water Removed (gallons)	Temperature (°C) F	pH	Conductivity (uS/cm)	Clarity
12:52	1	75°	7.5	636	Slightly Cloudy
12:55	5	64.7°	7.48	652	SLCDY
~~12:58~~ 1:09	10	67.9°	7.25	671	SLCDY
1:13	15	66.5°	7.25	640	SLCDY
1:29	20	66.9°	7.14	660	Very SLCDY
1:32	25	65.6°	7.31	662	Very SLCDY
1:35	30	64.5	7.5	656	Very SLCDY
1:38	35	63.4	6.1	640	Slightly Clear
1:41	40	64.5		638	Slightly Clear
		8-16-95 R.C			

19.1' 1:01 P.M.

WELL PURGING LOG

Installation: Minneapolis AIVG-B
Client/Project: ANGRC 1315-193
Well No. 591-001MW
Site: #1 UST 591
Purge Start: (Date) 8-16-95 (Time) 1312
Purge End: (Date) 8-16-95 (Time) 1355
Purged By: R. Cason & Byrd
Background PID Reading: 0.0
PID Reading: 0.0
Depth to Water (BTOC): ~~16.37~~ 16.31'
Depth to Bottom of Well (BTOC): ~~29.31~~ 29.31'
Volume of Water in Well (gallons) = (0.0408) x (well diameter (inches)^2) x height of water column (feet)
$4^2 = 16$ 12.94'

Volume of Water in Well x 3 = 25.35

Purge method: Teflon Bailer
Purge Water Containment: 5-Gallon Pail; vent to pavement as per MPCA requirement.
Average Rate of Removal of Water:
Weather: Cloudy, slight intermittent mist

Comments: Total Well Depth: 30'
1 well vol. = 8.45 GAL

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
1320	5	12.2	7.12	600	V. Sli. cldy	
1328	10	11.7	7.16	588	Sli Clear	
1342	15	12.2	7.26	583	Sli Clear	
1347	20	12.4	7.29	578	Clear	
1353	25	12.2	7.32	577	Clear	
1355	26	12.2	7.33	565	Clear	

WELL SAMPLING LOG

Installation: Minneapolis ANGB
Well No. 591-001 MW
Client/Project: ANGRC 1315-193
Site: UST Site No. 1
Sample Start: (Date) 8-16-95 (Time) 1400
Sample End: (Date) 8-16-95 (Time) 1410
Sampled By: R. Cason, Joe Byrd, Eric Armendo
Background PID Reading: 0
PID Reading: 0
Depth to Water (BTOC): 16.61'
Screen Interval:
Sampling method: Teflon Bailer
Sampling Equipment Decontamination method:

Lab Analyses: VOCs (SW 8240)
TPH-DRO (WDNR mod.)

QA/QC Samples: None

Weather: Partly Cloudy, mid 70s

Comments: WL = 16.61' BTOC

Time	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
1404	12.3	7.09	579	clear	
1408	12.2	7.29	559	clear	

AIR NATIONAL GUARD BASE

WELL DEVELOPMENT LOG

Monitoring Well: 651-002mw

Development Start: (Date) ~~8-11-95~~ 8-15-95 JB (Time) 1448

Development End : (Date) 8-15-95 (Time) 1522

Developed By : JByd, I Arredondo, J. Williams

PID Reading : (Background) 0.0 ppm (Reading) 0.0

Groundwater : (Water Level) 10.26 fbls (Well Depth) 24.96 fbls

Volume of Water in the Well: 9.6 gal

$V_{(gal)}$ = [0.0408] x [Well Diameter$_{(inches)}^2$] x [Height of Water in Well$_{(feet)}$]

$V_{(gal)}$ = (0.0408)(16) (14.7') = 9.6 gal

$V_{(gal)}$ x 3 = 28.8 gal

Development Method : ~~Bailer~~ JB grunfos sub.pump Containment : ~~Steel D.O.T. 55 gal Drum~~ Release To Ground @ well

Average Rate of Removal of Water : 2.5 gal/min gal/min.

Weather : Sunny, Breezy, 70°.

Comments : 0.0408 x 4 x 14.7' = Gal

pH meter is out on Hydac. Will develope without

Time	Amount of Water Removed (gallons)	Temperature (°C) F	pH	Conductivity (uS/cm)	Clarity
3:04 PM	5	55.5		656	Cloudy
3:06	10	51.7		612	Slightly Cloudy
3:08	15	51.5		605	Slightly Clear
3:11	20	52.0		858	Clear
3:13	25	51.5		840	Clear
3:15	30	51.4		841	Clear
3:17	35	51.5	JByd	840	Clear
3:19	40	51.6		832	Clear
3:21	45	51.3		826	Clear
3:22	50	51.5		825	Clear
		JByd			

WELL PURGING LOG

Installation: Minneapolis ANGB SI Well No. 651-MW02
Client/Project: ANGRC 1315-193 Site: UST Site No. 4
Purge Start: (Date) 8-17-95 (Time) 0923
Purge End: (Date) 8-17-95 (Time)
Purged By: R. Cason and Maxim Env. (Alex Chinn)
Background PID Reading: 0.3 ppm PID Reading: 2.1 ppm
Depth to Water (BTOC): 10.25 Depth to Bottom of Well (BTOC): 25.0'
Volume of Water in Well (gallons) = (0.0408) x (well diameter (inches)^2) x height of water column (feet) = 9.62

$4^2 = 16$ 14.75'

Volume of Water in Well x 3 = 9.62 x 3 = 28.86

Purge method: Stainless Steel Sub. Pump
Purge Water Containment: 5-Gal Bucket vent to ground as per MPCA Requirement
Average Rate of Removal of Water:
Weather: Cloudy, Lo 70's

Comments: ≈ 0.3 to 0.5' drawdown maintained while purging.
WL @ 0955 = 10.34 BTOC

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
0924	1	19.0	7.16	755	Clear	
0930	5	15.6	7.35	711	Clear	
0936	10	15.6	7.33	699	Clear	
0943	15	15.2	7.29	681	Clear	
0946	20	14.2	7.36	660	Clear	
0952	25	14.2	7.32	655	Clear	
0954	30	14.1	7.32	650	Clear	
0955 D.C.						

D.C. 8-17-95

WELL SAMPLING LOG

Installation: Minneapolis ANG-B SI Well No. 651-002mw
Client/Project: ANGRC 1315-193 Site: UST Site No. 4
Sample Start: (Date) 8-17-95 (Time) 1015
Sample End: (Date) 9-17-95 (Time) 1055
Sampled By: R. Cason, I. Arredondo
Background PID Reading: 0 PID Reading: 0
Depth to Water (BTOC): 10.29'
Screen Interval:
Sampling method: Teflon Bailer
Sampling Equipment Decontamination method:

Lab Analyses: VOCs (8240), TPH-DRO (WDNR mod.)
TPH-GRO (WDNR mod.), Total Lead (SW6010) ~~(Filtered)~~

QA/QC Samples: None

Weather: Cloudy, ~ 70's

Comments:
Collect Equipment Blank 651-003EB @ 1100
Water level after sampling = 10.28' BTOC

Time	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
1015	16.3	754	690	clear	
1055					

AIR NATIONAL GUARD BASE

WELL DEVELOPMENT LOG

Monitoring Well: MW-4 (BARR ENG.)

Development Start: (Date)_____ (Time)_____

Development End : (Date)_____ (Time)_____

Developed By : _____

PID Reading : (Background)_____ppm (Reading)_____

Groundwater : (Water Level)_____fbls (Well Depth)_____fbls

Volume of Water in the Well:

$V_{(gal)}$ = [0.0408] x [Well Diameter$_{(inches)}$]^2 x [Height of Water in Well$_{(feet)}$]

$V_{(gal)}$ =

$V_{(gal)}$ x 3 =

Development Method : Bailer Containment : Steel D.O.T. 55-gal Drum

Average Rate of Removal of Water : _____ gal/min.

Weather :

Comments :

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity

WELL PURGING LOG

Installation: Minneapolis ANGB SI Well No. MW-4 (BARR ENGINEERING)
Client/Project: ANGRC 1315-193 Site: UST No. 4
Purge Start: (Date) 8-17-95 (Time) 1124
Purge End: (Date) 8-17-95 (Time) 1149
Purged By: R. Cason, I. Arreanoo
Background PID Reading: 0.3 ppm PID Reading: 1.5 ppm 26.6
Depth to Water (BTOC): ~~12.0~~ 14.6 Depth to Bottom of Well (BTOC): ~~24.2~~
Volume of Water in Well (gallons) = (0.0408) x (well diameter (inches)^2) x height of water column (feet)
4" ^{2} = 16 12
7.83

Volume of Water in Well x 3 = 23.5

Purge method: Stainless steel sub. pump
Purge Water Containment:
Average Rate of Removal of Water:
Weather: Cloudy, mid 70's

Comments: Rusty material pulled up on tape,
Organic
TOC to GS = 31.75"

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
11:25	1	19	7.46	582	Slightly Cloudy	Rusty Color
11:27	5	15.5	7.37	528	Slightly Cloudy	Light Brown Color
11:33	10	14.1	7.15	499	"	"
11:37	15	14.1	7.23	492	"	"
11:41	20	14.1	7.20	485	"	"
11:45	25	13.9	7.32	471	Clear	
11:49	30	14.0	7.29	470	Clear	

26.6
14.6
12.0

WELL SAMPLING LOG

Installation: Minneapolis ANGB SI Well No. MW-4
Client/Project: ANGRC 1315-193 Site: UST SITE No. 4
Sample Start: (Date) 8-17-95 (Time) 1200
Sample End: (Date) 8-17-95 (Time) 1220
Sampled By: R. Cason I. Arredondo
Background PID Reading: 0 PID Reading: 0
Depth to Water (BTOC): 14.62
Screen Interval:
Sampling method: Teflon Bailer
Sampling Equipment Decontamination method:

Lab Analyses: VOCs (8240) TPH (GRO + DRO) (WDNR mod.) Total lead (SW 6010)

QA/QC Samples: None

Weather: Partly Cloudy, Lo 80's

Comments: slight hydrocarbon odor + slight sheen

Time	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
1200	12.3	7.82	454	clear	
1220	12.8	7.79	499	clear	

WELL PURGING LOG

Installation: MINNEAPOLIS ANGB
Well No. 591-001MW
Client/Project: HQ ANG/CERV
Site:
Purge Start: (Date) 19 Sept 95
(Time) 1050
Purge End: (Date) 19 Sept 95
(Time) 1123
Purged By: RA, ~~JB~~
Background PID Reading: 0.0 ppm
PID Reading: 0.0 ppm
Depth to Water (BTOC): 16.93'
Depth to Bottom of Well (BTOC): 28.~~80~~98'

Volume of Water in Well (gallons) = (0.0408) x (well diameter (inches))² x height of water column (feet) ~~B~~ (~~11.87'~~ 12.05') (0.6528) = ~~7.75 gal~~ ~~B~~
= 7.9 gal

Volume of Water in Well x 3 = 23.6 gal

Purge method: PVC Bailer
Purge Water Containment:
Average Rate of Removal of Water: 0.97 gal/min
Weather: Cold Rainy

Comments:

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
1058	8.0	12.0	7.19	573	Cloudy	
1108	16.0	11.6	7.32 ~~5.78~~	570	"	
1115	24.0	11.3	7.35	563	"	
1122	32.0	11.3	7.39	560	"	

WELL SAMPLING LOG

Installation: Minneapolis ANG 6B
Well No. 591-001MW
Client/Project:
Site:
Sample Start: (Date) 19 Sept 95
(Time) 1130
Sample End: (Date) 19 Sept 95
(Time) 1155
Sampled By: JB, RA
Background PID Reading: 0.0 ppm
PID Reading: 0.0 ppm
Depth to Water (BTOC):
Screen Interval:
Sampling method: Teflon Bailer (Disposable)
Sampling Equipment Decontamination method:
None

Lab Analyses:

VOC - SW8240
TPH - DRO WDNR

QA/QC Samples:

591-EB

Weather: Rainy, Cold

Comments:

Time	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks

WELL PURGING LOG

Installation: Minneapolis ANGB
Well No. 801-001MW
Client/Project: HQ ANG/CERV
Site:
Purge Start: (Date) 19 Sept 95
(Time) 0925
Purge End: (Date) 19 Sept 95
(Time) 0942
Purged By: FB RA
Background PID Reading: 0.0 ppm
PID Reading: 0.0 ppm
Depth to Water (BTOC): 6.29
Depth to Bottom of Well (BTOC): 10.73
Volume of Water in Well (gallons) = (0.0408) x (well diameter (inches))² x height of water column (feet) (4.44') (0.1632)
= 0.72 gal

Volume of Water in Well x 3 = 2.2 gal

Purge method: PVC Bailer
Purge Water Containment:
Average Rate of Removal of Water: 0.3 gal/min
Weather: Rainy, 60's

Comments:

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
0930	~~2.0~~	20.3	6.88	525	Lightly cldy	
0933	~~4.0~~ 3.0	20.9	6.94	543	"	
0937	~~6.0~~ 4.0	21.6	7.01	541	"	
0941	~~8.0~~ 5.0	21.7	7.08	538	"	

WELL SAMPLING LOG

Installation: Minneapolis ANGB
Client/Project: HQ ANG/ CERV
Sample Start: (Date) 19 Sept 95
Sample End: (Date) 19 Sept 95
Sampled By: RA JB
Background PID Reading: 0.0 ppm
Depth to Water (BTOC): 6.47
Screen Interval:
Sampling method: Teflon bailer (disposable)
Sampling Equipment Decontamination method:
none

Well No. 801-001MW
Site:
(Time) 0958
(Time) 1020
PID Reading: 0.0 ppm

Lab Analyses:
VOL - SW8240
TPH DRO WDNR

QA/QC Samples:
801-FB

Weather: Rainy 50's

Comments:

Time	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks

WELL PURGING LOG

Installation: Minneapolis ANGB
Well No. 873 - 001 MW
Client/Project: HQ ANG/CERT
Site:
Purge Start: (Date) 19 Sept 95
(Time) 0808
Purge End: (Date) 19 Sept 95
(Time) 0823
Purged By: Byrd, Abernathy
Background PID Reading: 0.0 ppm
PID Reading: 0.0 ppm
Depth to Water (BTOC): 7.62
Depth to Bottom of Well (BTOC): 10.72
Volume of Water in Well (gallons) = (0.0408) x (well diameter (inches))² x height of water column (feet) (3.1')(0.1632) = 0.5 gal

Volume of Water in Well x 3 = 1.5 gal

Purge method: PVC bailer
Purge Water Containment:
Average Rate of Removal of Water: 0.33 gal/min
Weather: Cloudy, 50's - 60's

Comments:

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
0817	1.0	17	6.85	~~9~~ 634	Cloudy	
0819	2.0	17.4	6.91	633	"	
0821	3.0	17.3	6.92	630	"	
0822	4.0	17.1	6.93	629	"	
0824	5.0	17.2	6.92	630	"	

WELL SAMPLING LOG

Installation: Minneapolis ANGB
Client/Project: HQ ANG/CEVR
Sample Start: (Date) 19 Sept 95
Sample End: (Date) 19 Sept 95
Sampled By: RA, JB
Background PID Reading: 0.0 ppm
Depth to Water (BTOC): 7.64
Screen Interval:

Well No. 873-001 MW
Site:
(Time) 0832
(Time) 0853
PID Reading: 0.0 ppm

Sampling method: Disposable Teflon bailer
Sampling Equipment Decontamination method:
~~Alconox, Potable Water Rinse, DI Rinse, Methanol~~ JB
none. Disposable Bailer

Lab Analyses:

VOC - SW8240
TPH - DRO WDNR

QA/QC Samples:

873 - MS/MSD

Weather: Cloudy. 60's

Comments:

Time	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
0834	17.3	6.95	621	Cloudy	

WELL PURGING LOG

Installation: Minneapolis ANGB
Well No. 651-001MWA
Client/Project: HQ ANG/CERV
Site:
Purge Start: (Date) 21 Sept 95
(Time) 1104
Purge End: (Date) 21 Sept 95
(Time) 1120
Purged By: JRyd, R. abernathy
Background PID Reading: 0.0 ppm
PID Reading: 0.0 ppm
Depth to Water (BTOC): 6.36'
Depth to Bottom of Well (BTOC): 12.97'
Volume of Water in Well (gallons) = (0.0408) x (well diameter (inches))² x height of water column (feet) (6.61)(0.1632) = 1.1 gal

Volume of Water in Well x 3 = 3.2 gal

Purge method: PVC bailer
Purge Water Containment:
Average Rate of Removal of Water:
Weather: Cloudy, 40's

Comments:

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
1109	1.0	15.6	7.21	353	Cloudy	
1111	2.0	16.2	7.11	590	"	
1113	3.0	16.5	7.09	570	"	
1115	4.0	16.2	7.13	583	"	
1118	5.0	16.1	7.21	582		

WELL SAMPLING LOG

Installation: MINNEAPOLIS ANGB
Well No. 651-001MWA
Client/Project: HQ ANG/CERT
Site:
Sample Start: (Date) 21 Sept 95
(Time) 1125
Sample End: (Date) 21 Sept 95
(Time) 1142
Sampled By: JB, RA
Background PID Reading: 0.0 ppm
PID Reading: 0.0 ppm
Depth to Water (BTOC): 7.88'
Screen Interval:
Sampling method: Disposable Teflon Bailer
Sampling Equipment Decontamination method:

Lab Analyses:

Lead SW 6010
TPH-DRO WDNR
TPH-GRO WDNR
VOC SW ~~602~~ 8240

QA/QC Samples:

/

Weather: 40's, Cold, Windy

Comments:

Time	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks

WELL PURGING LOG

Installation: Minneapolis ANGB
Client/Project: HQ ANG/CERV
Purge Start: (Date) ~~15~~ 21 Sept 95
Purge End: (Date) ~~15~~ 21 Sept 95
Purged By: SB, RH
Background PID Reading: 0.0 ppm
Depth to Water (BTOC): 11.31'

Well No. 651-00ZMW
Site:
(Time) 1221
(Time) 1250
PID Reading: 0.0 ppm
Depth to Bottom of Well (BTOC): 25.00

Volume of Water in Well (gallons) = (0.0408) x (well diameter (inches))² x height of water column (feet) (13.69')(0.6528) = 8.9 gal

Volume of Water in Well x 3 = 26.8 gal

Purge method: PVC Bailer
Purge Water Containment: ——
Average Rate of Removal of Water:
Weather: Cold, Cloudy, Misty

Comments:

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
12.23	9.0	12.0	7.08	584	Cloudy	
12.38	18.0	13.0	7.29	572	"	
12.45	27.0	12.9	7.34	556	"	
1248	32.0	12.5	7.25	557	"	

WELL SAMPLING LOG

Installation: Minneapolis ANGB
Client/Project: HQ ANG/CERV
Sample Start: (Date) 21 Sept 95
Sample End: (Date) 21 Sept 95
Sampled By: JB, RA
Background PID Reading: 0.0 ppm
Depth to Water (BTOC):
Screen Interval:
Sampling method: Teflon Bailer Disposable
Sampling Equipment Decontamination method:

Well No. 651-002 MW
Site:
(Time) 1255
(Time) 1311
PID Reading: 0.0 ppm

Lab Analyses:

Lead SW6010
VOC SW8240
TPH-GRO WDNR
TPH-DRO WDNR

QA/QC Samples:

Weather: Rainy, Cold

Comments:

Time	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks

WELL PURGING LOG

Installation: Minneapolis ANGB
Well No. MW-4
Client/Project: HQ ANG/CEVR
Site:
Purge Start: (Date) 21 Sept 95
(Time) 1327
Purge End: (Date) 21 Sept 95
(Time) 1357
Purged By: JB RA
Background PID Reading: 00 ppm
PID Reading: 75 ppm
Depth to Water (BTOC): 15.60
Depth to Bottom of Well (BTOC): 26.42
Volume of Water in Well (gallons) = (0.0408) x (well diameter (inches))² x height of water column (feet) (10.82') (0.6528) = 7.06 gal

Volume of Water in Well x 3 = 21.2 gal

Purge method: PVC Bailer
Purge Water Containment:
Average Rate of Removal of Water:
Weather: Rainy, Cold

Comments:

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
1333	~~7.0~~ 5.0	10.4	7.22	492	cloudy	sheen odor
1343	~~14.0~~ 10.0	10.7	7.18	~~718~~ 483 RA	"	sheen discrete HC blebs, odor
1347	~~21.0~~ 15.0	10.3	7.19	473	clearing	
1352	20.0	10.4	7.18	472	clear	"
1356	25.0	10.3	7.19	473	clear	"

WELL SAMPLING LOG

Installation: Minneapolis ANGB
Client/Project: HQ ANG/ICEVR
Sample Start: (Date) 21 Sept 95
Sample End: (Date) 21 Sept 95
Sampled By:
Background PID Reading: 0.0 ppm
Depth to Water (BTOC): 15.63
Screen Interval:
Sampling method: Disposable Teflon Bailer
Sampling Equipment Decontamination method:

~~None~~

Well No. MW-4
Site:
(Time) 1407
(Time) 1440
PID Reading: 126 ppm

Lab Analyses:

Lead SW6010
VOC SW 8240
TPH-DRO WDNR
TPH-GRO WDNR

QA/QC Samples:

MW-4-Dup

Weather: Raining Cold

Comments:

Time	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks

WELL DEVELOPMENT LOG

Installation: Minneapolis ANGB
Client/Project: IRP ANG/CERC
Development Start: (Date) 21 Sept 95
Development End: (Date) 21 Sept 95
Development By: ~~JB~~ JB, RA
Background PID Reading: 0.0 ppm
Depth to Water (BTOC): 13.56

Well No. 651-~~GC3~~ JB ~~ANG~~ 001MWB
Site:
(Time) 0749
(Time) 1000
PID Reading: 164.7 ppm
Depth to Bottom of Well (BTOC): 21.50'

Volume of Water in Well (gallons) = (0.0408) x (well diameter (inches))² x height of water column (feet) (7.94')(0.1632) = 1.3 gal

Volume of Water in Well x 3 = 3.9 gal

Development method:
Development Water Containment:
Average Rate of Removal of Water:
Weather:

Comments: Very strong odor, Product in measurement bucket.

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
0800	2.0	12.0°	8.71	396	Cloudy	Free Product
0815	4.0	12.3°	8.15	456	Cloudy	Free product
0927	6.0	12.1°	7.85	447	cloudy	" "
0934	8.0	12.4°	7.88	268	"	" "
0941	10.0	12.3°	7.80	470	"	" "
0948	12.0	12.0°	7.75	475	"	" "
0952	14.0	12.0	7.79	477	"	" "

WELL PURGING LOG

Installation: Minneapolis ANGB
Client/Project: HQ ANG/CERV
Purge Start: (Date) 22 Sept 95
Purge End: (Date) 22 Sept 95
Purged By: RA GB
Background PID Reading: 0.0 ppm
Depth to Water (BTOC): 13.50'

Well No. 651-~~003A100~~ GB 001MWB
Site:
(Time) 0930
(Time) 0950
PID Reading:
Depth to Bottom of Well (BTOC): 21.5

Volume of Water in Well (gallons) = (0.0408) x (well diameter (inches))² x height of water column (feet) (8.0')(0.1632) = 1.3

Volume of Water in Well x 3 = 3.9

Purge method: PVC Bailer
Purge Water Containment: Steel drum
Average Rate of Removal of Water:
Weather: Cloudy, Cold (30's)

Comments: There is Deconed Teflon bailer in Hole. No Temp-pH-Cond Readings Will Purge 5 well volumes. There are a few oil "blossoms" and a sheen to the water.

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
0950	6.5 gals				Cloudy	

WELL SAMPLING LOG

Installation: Minneapolis ANGB
Client/Project: HQ ANG/CERV
Sample Start: (Date) 22 Sept 95
Sample End: (Date) 22 Sept 95
Sampled By: JB RA
Background PID Reading: 0.0 ppm
Depth to Water (BTOC): 13.5
Screen Interval:
Sampling method: Disposable Teflon Bailer
Sampling Equipment Decontamination method:
~~None~~

Well No. 651-~~003~~ JB ~~AHN~~ 001MWB
Site:
(Time) 0958
(Time) 1010

PID Reading: 68 ppm

Lab Analyses:
Lead SW6010
VOC SW8240
TPH-DRO WDNR
TPH GRO WDNR

QA/QC Samples:

Weather: Cloudy 30's

Comments:

Time	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks

WELL PURGING LOG

Installation: Minneapolis ANGB
Client/Project: HQ ANG / CEVR
Purge Start: (Date) 26 OCT 95 (Time) 1511
Purge End: (Date) 26 OCT 95 (Time) 1548
Purged By: J. BYRD
Well No. 651-001MWB
Site:
Background PID Reading: 0.0 ppm PID Reading: 143 ppm
Depth to Water (BTOC): 12.73' Depth to Bottom of Well (BTOC): 21.5'
Volume of Water in Well (gallons) = (0.0408) x (well diameter (inches))² x height of water column (feet) (8.77') (0.0408)(4) = 1.43 gal

Volume of Water in Well x 3 = 4.29 gal

Purge method: Teflon Disposable bailer
Purge Water Containment: Plastic line steel drum
Average Rate of Removal of Water: 10 gal/hr
Weather: Cool, 60's, Drizzly

Comments:

Time	Amount of Water Removed (gallons)	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks
1527	1.5	13.8	16.7	441	Cloudy	
1533	3.0	13.1	NO READING	420	"	
1540	5.0	13.1	"	409	"	
1547	6.0	13.1	"	409	"	

WELL SAMPLING LOG

Installation: Minneapolis ANGB
Well No. 657-001MWB
Client/Project: HQ ANG/CEVR
Site:
Sample Start: (Date) 26 OCT 95
(Time) 1605
Sample End: (Date) 26 OCT 95
(Time) 1630
Sampled By: J. Byrd
Background PID Reading: 0.0 ppm
PID Reading: 143 ppm
Depth to Water (BTOC): 12.73'
Screen Interval:
Sampling method: Teflon Disposable Bailer
Sampling Equipment Decontamination method:
NONE. BAILER WAS PRE-CLEANED.

Lab Analyses:

TPH - DRO
TPH - GRO
VOC - SW 8240
Lead - SW6010

QA/QC Samples:

NONE

Weather: Cool / 60's, DRIZZLY

Comments:

Time	Temperature (°C)	pH	Conductivity (uS/cm)	Clarity	Remarks

APPENDIX G

CHAIN OF CUSTODY

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Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-193	Minnesota ANG-B SI	Minnesota ANG-B, St. Paul MN

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
0-1.5' 651-001 BH	8-1-95 1330	✓		2 Brass Sleeves	Soil	None	Total Lead (6010) BTEX+MTBE(8020) TPH(GRO/DRO)WIDNR mod.	
~~R 3.5-5' 651-001 BH~~								
8.5-10' 651-001 BH	8-1-95 1350	✓		2 Brass Sleeves	Soil	None		
0-1.5' 651-002 BH	8-1-95 1425	✓		2 Brass Sleeves	Soil	None		
8.5-10' 651-002 BH	8-1-95 1445	✓		2 Brass Sleeves	Soil	None		
Trip Blank	7-28-95			3 40ml VOA	Aqueous	HCL	BTEX+MTBE (8020)	Trip Blank

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-1-95 Time: 1700	Received by: (Signature)	Date: 8-1-95 Time: 1700	Intact ✓
Affiliation	Relinquished by: (Signature)	Date: 8-1-95 Time: 1755	Received by: (Signature)	Date: 8-1-95 Time: 1755	Intact
OP Tech	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact

SAMPLER REMARKS: All Samples Shipped in Iced Coolers
Fedex Bill 5397591662

Seal #

Received for laboratory: (Signature) Date: Time:

Laboratory No.

Data Results to: Russ Cason / Op Tech (210) 731-0000

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-193	Mobil Ann-B SI	Mobil Ann-B, St. Paul, MN

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
0-1.5' 651-001BH	8-1-95 1120	✓		2 Brass sleeves	Soil	None	TOTAL LEAD (6010) BTEX+MTBE(8020) TPH(GRO/DRO) WIPE ONLY	
21.5-23' 651-001BH								
8.5-10' 651-001BH	8-1-95 1130	✓		2 Brass sleeves	Soil	None		
0-1.5' 651-002BH	8-1-95 1445	✓		2 Brass sleeves	Soil	None		
8.5-10' 651-002BH	8-1-95 1445	✓		2 Brass sleeves	Soil	None		
TRIP BLANK	7-28-95			3 40mL VOA	Aqueous	HCL	BTEX+MTBE (8020)	TRIP BLANK

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-1-95 Time: 1200	Received by: (Signature)	Date: Time:	Intact
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
QST Env	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS: All samples submitted in ice chest Fedex Bill 5347941662			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal #			Data Results to: Ken Cornelius (713) 531-0080		

R.L.

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-193	MINNEAPOLIS ANG-B SI	MINNEAPOLIS ANG-B MINNESOTA

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
651-001EB	8-2-95 0805	✓		1L PLASTIC	AQUEOUS	HNO_3	TOTAL LEAD SW 6010	
651-001EB	8-2-95 0805	✓		1L AMBER			TPH (DRO) WDNR Mod.	
651-001EB	8-2-95 0805	✓		3 40ml VOA		~~HCL~~ R.L.	TPH (GRO) WDNR Mod.	
651-001EB	8-2-95 0805	✓		3 40ml VOA		HCL	BTEX + MTBE SW8020	
651-001FB	8-2-95 0815	✓		1L PLASTIC	AQUEOUS	HNO_3	TOTAL LEAD SW6010	
651-001FB	8-2-95 0815	✓		1L AMBER			TPH (DRO) WDNR Mod.	
651-001FB	8-2-95 0815	✓		3 40 ml VOA			TPH (GRO) WDNR Mod.	
651-001FB	8-2-95 0815	✓		3 40ml VOA		HCL	BTEX + MTBE SW8020	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-2-95 Time: 1610	Received by: (Signature)	Date: Time:	Intact
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact

SAMPLER REMARKS: All samples shipped in iced coolers

Seal #

Received for laboratory: (Signature) — Date: Time:

Data Results to:

Laboratory No.

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-193	Minneapolis ANG-B SI	Minneapolis Minnesota

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
0-2' 651-003BH	8-2-95 0815	✓		2 Brass sleeves	Soil	None	BTEX + MTBE (8020), TPH (GRO & DRO) w/PNR mod, Total Lead (SW 6010)	
0-2' Dup 651-003BH	8-2-95 0815	✓		↓	↓	↓	↓	
3.5-5' 651-003BH	8-2-95 0830	✓		↓	↓	↓	↓	
8.5-10' 651-003BH	8-2-95 0845	✓		↓	↓	↓	↓	
0-1.5' 652-004BH [illegible]	8-2-95 0915	✓		↓	↓	↓	↓	
8.5-10' 652-004BH	8-2-95 0945	✓		↓	↓	↓	↓	
13.5-15' 652-006BH	8-2-95 1410	✓		↓	↓	↓	↓	
3.5-5' 652-006BH	8-2-95 1340			↓	↓	↓	↓	
Trip Blank	7-28-95			3 40 ml VOA	Aqueous	HCl	BTEX + MTBE (8020)	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-2-95 Time: 1610	Received by: (Signature)	Date: Time:	Intact
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact

SAMPLER REMARKS: All samples submitted to Pace Analytical

Seal #	Received for laboratory: (Signature)	Date: Time:	Laboratory No.
	Data Results to:		

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-193	Minnesota HNG-B SI	Minneapolis, MN

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
651-002 EB	8-3-95 0905	✓		1 L Plastic	Aqueous	HNO_3	Total Lead SW6010	
↓	"	✓		1L Amber	↓		TPH (DRO) WDNR mod.	
↓	↓	✓		3 40 ml VOA	↓	HCl	TPH (GRO) WDNR mod.	
↓	↓	✓		3 40 ml VOA	↓	HCl	BTEX + MTBE SW8020	
651-002 FB	8-3-95 1000	✓		1L Plastic	Aqueous	HNO_3	Total lead SW6010	
↓	↓	✓		1L Amber	↓		TPH (DRO) WDNR mod.	
↓	↓	✓		3 40 ml VOA	↓	HCl	TPH (GRO) WDNR mod.	
↓	↓	✓		3 40 ml VOA	↓	HCl	BTEX + MTBE SW8020	
Trip Blank	7-28-95	✓		2 40 ml VOA	Aqueous	HCl	BTEX + MTBE SW8020	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-3-95 Time: 1721	Received by: (Signature)	Date: 08/04/95 Time: 1721	Intact ✓
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS:			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal #			Data Results to: (210) 731-0000 Russell Gason Operations Tech		

Environmental Laboratory
8880 Interchange Drive
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713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-193	Minnesota ANG-B SI	Minneapolis, MN

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
9-10' MWMW 652-007BH	8-3-95 0920	✓		2 Brass Sleeves	Soil	None	BTEX + MTBE (8020), TPH (GRO/DRO) by WDNR mod. TCLP Lead 6010	
14-15' 652-007BH	8-3-95 0935	✓		↓	↓	↓	↓	
2.5-3.5' 652-007BH	8-3-95 0840	✓		↓	↓	↓	↓	
1-2' 652-007BH	8-3-95 0830	✓		↓	↓	↓	↓	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-3-95 Time: 1721	Received by: (Signature)	Date: 8/03/95 Time: 1721	Intact
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact

SAMPLER REMARKS:	Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal #	Data Results to: (210) 731-0000 Russell Cason Operational Tech		

Environmental Laboratory
8880 Interchange Drive
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713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-193	Minnesota ANG-B ST	Minneapolis, Minnesota

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
2-3' 591-001BH	8-7-95 0835	✓		1 Brass Sleeve	Soil	None	BTEX (SW8020), TPH-DRO (WDNR Mod.)	
13.5-14.5' 591-001BH	8-7-95 0910	✓						
0.5-1.5' 591-002BH	8-7-95 1005	✓						
13.5-14' 591-002BH	8-7-95 1030	✓						
14-15' 591-003BH	8-7-95 1153	✓						
9-10' MS/MSD 591-003BH	8-7-95 1140	✓		3 Brass Sleeves				MS/MSD
4-5' 591-003BH	8-7-95 1130	✓		1 Brass Sleeve				
DUP 591-001	8-7-95 —	✓						Blind Duplicate
18.5-19' 591-004BH	8-7-95 1546	✓						
9-10' 591-004BH	8-7-95 1508	✓						

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-7-95 Time: 1807	Received by: (Signature) Caleb Berson	Date: 08/07/95 Time: 5:12	Intact ☐ VB
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
Affiliation: OPTECH	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS: All samples shipped in Ice Coolers			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal #			Data Results to: Russ Cason-OPTECH (210) 731-0000		

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
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Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-193	Minnesota ANG IB SI	Minneapolis, Minnesota

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
591-001FB	8-7-95 1120	✓		1L Amber	Aqueous	None	TPH - DRO (WDNR mod.)	Field Blank
591-001FB	8-7-95 1120	✓		3 40ml VOA	↓	HCl	BTEX (SW 8020)	↓
591-001EB	8-7-95 1157	✓		1L Amber	Aqueous	None	TPH - DRO (WDNR mod.)	Equipt. Blank
591-001EB	8-7-95 1157	✓		3 40ml VOA	↓	HCl	BTEX (SW 8020)	↓
Trip Blank	7-28-95	✓		3 40ml VOA	Aqueous	HCL	BTEX (SW 8020)	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-7-95 Time: 1807	Received by: (Signature)	Date: 8/7/95 Time: 5:12pm	Intact
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
OSTECH Oxnard	Relinquished by: (Signature)	Date: Time: --	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS: All samples shipped in Ice Coolers			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal #			Data Results to: Russell Cason - OSTech (210) 731-0000		

Environmental Laboratory
8880 Interchange Drive
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713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-193	NW Interchange Area SI	Minneapolis, Minnesota

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
4-5' 873-001SB	8-8-95 1447	✓		1 Brass Sleeve	Soil	None	VOCs (Sw8240) TPH-DRO (Wisc Mod.)	
9-10' 873-002SB	8-8-95 1502	✓		↓	↓	↓	↓ ↓	
873-001FB	8-8-95 1545	✓		3 40ml VOA	Aqueous	HCL	VOCs (Sw8240)	Field Blank
873-001FB	8-8-95 1545	✓		1 L Amber	↓	None	TPH-DRO (Wisc Mod.)	↓
TRIP BLANK	7-28-95	—		3 40ml VOA	Aqueous	HCL	VOCs (Sw 8240)	TRIP BLANK

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-8-95 Time: 1710	Received by: (Signature)	Date: 8/8/95 Time: 1710	Intact
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
OPTECH	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact

SAMPLER REMARKS: All samples shipped on Iced coolers

Seal #

Received for laboratory: (Signature) — Date: Time:

Laboratory No.

Data Results to: Russ Cash-OPTECH (214) 731-0000

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-143	Minneapolis ANG-IR SI	Minneapolis, Minnesota

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
1.5-2.5' 873-002BH	8-4-95 0828	✓		1 Brass Sleeve	Soil	None	VOCs (SW8240) TPH-DRO (WDNR)	
873-002DUP	8-4-95	✓						Blind Duplicate
9-10' 873-002BH	8-4-95 0851	✓						
4-5' 873-003BH	8-4-95 0955	✓						
9-10' 873-003BH	8-4-95 1010	✓						
9-10' MS/MSD 873-003BH	8-4-95 1010	✓		2 Brass Sleeves				Matrix Spike/MSD
873-001EB	8-4-95 0900	✓		1L Amber	Aqueous	Nitric	TPH-DRO (WDNR)	Equipment Blank
873-001EB	8-4-95 0900	✓		3 40ml VOA		HCL	VOCs (SW8240)	
Trip Blank	8-5-95	✓						Trip Blank

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-4-95 Time: 1700	Received by: (Signature)	Date: Time:	Intact
Russ Cason					
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
OI Tech	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact

SAMPLER REMARKS: All samples shipped on ice overnight

Seal #

Received for laboratory: (Signature) — Date: Time:

Data Results to: Russ Cason - OI Tech (210) 731-0100

Laboratory No.

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-193	Minneapolis AN-B SI	Minneapolis, Minnesota

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
4-10' 801-001BH	8-4-95 1345	✓		1 BRASS Sleeve	Soil	None	BTEX (SW8020), TPH-DRO (WDNR)	
13.5-13.8 801-001BH	8-4-95 1400	✓		↓	↓	↓	↓	
9-10' 801-002BH	8-4-95 1530	✓						
4-5' 801-002BH	8-4-95 1518	✓						
801-001DUP	8-4-95	✓						Blind Replicate
801-001FB	8-9-95 1920	✓		1L Amber	Aqueous	None	TPH-DRO (WDNR)	Field Blank
801-001FB	8-9-95 1920	✓		3 40ml VOA		HCl	BTEX (SW8020)	↓
801-001EB	8-9-95 1420	✓		1L Amber			TPH-DRO (WDNR)	Equipment Blank
801-001EB	8-9-95 1420	✓		3 40ml VOA			BTEX (SW8020)	↓
TRIP BLANK	7-28-95	✓		↓	↓		↓	TRIP BLANK

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-9-95 Time: 1701	Received by: (Signature)	Date: Time:	Intact
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
OPTECH	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
			Received for laboratory: (Signature)	Date: Time:	Laboratory No.

SAMPLER REMARKS:

Seal #

Data Results to: Russell Olsen - OPTECH (210) 731-000

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-193	Minneapolis ANG-13 ST	Minneapolis

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
4-5' 801-003BH	8-10-95 0850	✓		1 Brass Sleeve	Soil	None	BTEX (SW8020), TPH-DRO (WDNR)	
9-10' 801-003BH	8-10-95 0855	✓		1 Brass Sleeve				
9-10' MS/MSD 801-003BH	8-10-95 0855	✓		2 Brass Sleeves				MATRIX SPIKE/MSD
1315193-Decon	8-10-95 0938	✓		1L Amber	Aqueous	None	TPH-DRO (WDNR mod.)	
1315193-Decon	8-10-95 0938	✓		3 40ml VOA		HCL	VOCs (SW8240)	
1315193-Decon	8-10-95 0938	✓		↓		HCL	TPH-GRO (WDNR mod.)	
1315193-Decon	8-10-95 0938	✓		1L Plastic		HNO_3	Total Lead (SW6010)	
Trip Blank	8-5-95	✓		2 40ml VOA		HCL	VOCs (SW8240)	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-10-95 Time: 1500	Received by: (Signature)	Date: Time:	Intact
Affiliation: OPTECH	Relinquished by: (Signature)	Date: Time: 1525	Received by: (Signature)	Date: 8-10-95 Time: 1525	Intact
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact

SAMPLER REMARKS:

Seal #

Received for laboratory: (Signature) — Date: Time: — Laboratory No.

Data Results to: Russ Cason - OPTECH (210) 731-0000

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-193	Minnesota ANGB SI	Minneapolis, Minnesota

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
801-001MW	8-16-95 1100	✓		1L ~~2 1/2 gal~~ Amber	Aqueous	None	TPH-DRO (WDNR Mod.)	
801-001MW	8-16-95 1100	✓		3 40ml VOA		HCl	VOCs (SW8240)	
MS/MSD 801-001MW	8-16-95 1115	✓		1L Amber		None	TPH-DRO (WDNR Mod.)	Matrix Spike/MSD
MS/MSD 801-001MW	8-16-95 1115	✓		3 40ml VOA		HCL	VOCs (SW8240)	↓
873-001MW	8-16-95 1235	✓		1L Amber		None	TPH-DRO (WDNR Mod.)	
873-001MW	8-16-95 1235	✓		3 40ml VOA		HCl	VOCs (SW8240)	
~~873-001~~ R.C.								
873-GW-FB	8-16-95 1245	✓		1L Amber	Aqueous	None	TPH-DRO (WDNR Mod.)	Field Blank
873-GW-FB	8-16-95 1245	✓		3 40ml VOA		HCl	VOCs (SW8240)	Field Blank
Trip Blank	8-5-96			2 40ml VOA		HCl	VOCs (SW8240)	Trip Blank

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-16-95 Time: 1500	Received by: (Signature)	Date: 8-16-95 Time: 1500	Intact
Affiliation	Relinquished by: (Signature)	Date: 8-16-95 Time: 1520	Received by: (Signature)	Date: 8/16/95 Time:	Intact DK
OP Tech	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS:			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal # 1315-193 8-16-95			Data Results to: Russ Cason - OP Tech (210) 731-4000		

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-193	Minnesota ANGB SI	Minneapolis, Minnesota

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
591-001MW	8-16-95 1405	✓		1L Amber	Aqueous	None	TVH-DRO (WDNR mod.)	
591-001MW	8-16-95 1405	✓		3 40ml VOA	↓	HCl	VOCs (SW8240)	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-16-95 Time: 1500	Received by: (Signature)	Date: 8-16-95 Time: 1500	Intact
Affiliation: OPTECH	Relinquished by: (Signature)	Date: 1520 Time: 8-16-95	Received by: (Signature)	Date: 8/16/9 Time: 930	Intact DK
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
			Received for laboratory: (Signature)	Date: Time:	Laboratory No.

SAMPLER REMARKS:

Seal # 1315-193 8-16-95

Data Results to: Russ Casum - OpTech (214) 731-0000

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-193	Minneapolis ANG IS SI	Minneapolis, Minnesota

	Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
✓	651-003 DUP	8-17-95	✓		~~6 VOA, 1 BRS, 1 Glass~~, 1L Plastic	Aqueous	HNO_3	Total Lead (SW6010)	Blind Duplicate
✓			✓		1L Glass		HCl	Total Petroleum Hydrocarbons - DRO (WDNR mod.)	
✓			✓		3 40ml VOA		HCl	TPH - GRO (WDNR mod.)	
✓			✓		3 40ml VOA		HCl	VOCs (SW 8240)	
✓	MW-4	8-17-95 1200	✓		1L Glass		HCl	TPH - DRO (WDNR mod.)	
✓			✓		1L Plastic		HNO_3	Total Lead (SW6010)	
✓			✓		3 40ml VOA		HCl	TPH - GRO (WDNR mod.)	
✓			✓		3 40ml VOA		HCl	VOCs (SW8240)	
✓	651-003 EB	8-17-95 1105	✓		1L Glass		HCl	TPH - DRO (WDNR mod.)	EQUIPT. BLANK
✓			✓		1L Plastic		HNO_3	Total Lead (SW6010)	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-17-95 Time: 1700	Received by: (Signature)	Date: 8/17/95 Time: 1706	Intact
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
OPTech	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact

SAMPLER REMARKS:

Seal # 1315-193 A

Received for laboratory: (Signature) — Date: Time:

Laboratory No.

Data Results to: Russ Cason - OPTech (214) 731-0000

Environmental Laboratory
8880 Interchange Drive
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713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-193	Minneapolis ANG-B SI	Minneapolis, Minnesota

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
651-003EB	8-17-95 1105	✓		3 40ml VOA	Aqueous	HCl	TPH-GRO (WDNR mod.)	Equipt. Blank
↓	↓	✓		3 40ml VOA	↓	HCl	VOCs (SW 8240)	↓
Trip Blank	8-5-95			2 40ml VOA	↓	HCl	VOCs (SW 8240)	Trip Blank

Samplers: (Signature)	Relinquished by: (Signature)	Date: 8-17-95 Time: 1700	Received by: (Signature)	Date: 8/17 Time: 1705	Intact 1
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
OPTech	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact

SAMPLER REMARKS:

Seal # 1315-193 A

Received for laboratory: (Signature) — Date: Time:

Data Results to: Russ Cason - OPTech (210) 731-4000

Laboratory No.

Environmental Laboratory
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Analysis Request and Chain of Custody Record

Page 1 of 1

Project No.: 1315-193

Client/Project Name: Minneapolis ANA-13 SI

Project Location: Minneapolis, Minnesota

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
651-001MWA	8-17-95 1315	✓		1L GLASS	Aqueous	HCl	TPH-DRO (WDNR Mod.)	
		✓		1L PLASTIC		HNO_3	TOTAL LEAD (SW6010)	
		✓		3 40 ml VOA		HCl	TPH-GRO (WDNR mod.)	
651-002MW	8-17-95 1015 R.C.	✓		3 40 ml VOA		HCl	VOCs (SW8240)	
		✓		1L GLASS		HCl	TPH-DRO (WDNR Mod.)	
		✓		1L PLASTIC		HNO_3	TOTAL LEAD (SW6010)	
		✓		3 40 ml VOA		HCl	TPH-GRO (WDNR Mod.)	
TRIP BLANK	8-5-95			3 40ml VOA		HCl	VOCs (SW8240)	
				2 40ml VOA		HCl	VOCs (SW8240)	TRIP BLANK

Samplers: (Signature)

Affiliation: TECH

Relinquished by: (Signature)

Relinquished by: (Signature)

Relinquished by: (Signature)

Date: 8-17-95 Time: 1705 — Received by: (Signature)

Date: Time: — Received by: (Signature)

Date: Time: — Received by: (Signature)

Received for laboratory: (Signature)

Data Results to: Russ Carson-OPTECH (210) 72[illegible]

Date: 8/17/95 Time: 1705 — Intact

Date: Time: — Intact

Date: Time: — Intact

Date: Time: — Laboratory No.

REMARKS:

15-193 B

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-113	OPTECH	[illegible]

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
511-GWMW	1-14-95 1150			3-VOA	[illegible]	HCl	~~TPH-[illegible]~~ JB VOC 8021-8240	
511-GWMW	1-14-95 1150			1-LITER	WATER	HCl	TPH-DRO w/SNR	
Trip Blank	1-13-95		B	2/-VOA	"	HCl	VOC 8021-8240	
511-ER	1-11-95 1155			3-VOA	"	HCl	VOC 8021-8240	
511-ER	1-11-95 1155			1-LITER	"	HCl	TPH-DRO w/SNR	
601-GWMW	1-14-95 1010			3-VOA	"	HCl	VOC 8021-8240	
601-GWMW	1-14-95 1010			1-LITER	"	HCl	TPH-DRO w/SNR	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 9-14-95 Time: 1336	Received by: (Signature)	Date: 9-14-95 Time: 1376	Intact
[signature]	[signature]		[signature]		
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
OPTECH					
OPTECH	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS:			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal #			Data Results to:		

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-113	ATTECH / Minneapolis Air CB	Minneapolis

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
TRIP BLANK	9-13-95			2-VOA	WATER	HCl	VOC SW-8240	
873-SOIL	9-14-95 0835			3-VOA	"	"	VOC SW-8240	
" "	"			1-liter	"	"	TPH-DRO WDNR	
873-MS/MSD	9-14-95 0945			3-VOA	"	"	VOC SW-8240	
" " "	"			1-liter	"	"	TPH-DRO WDNR	
SB1-FB	9-14-95 1000			3-VOA	"	"	VOC SW-8240	
" "	"			1-liter	"	"	TPH-DRO WDNR	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 9-14-95 Time: 1336	Received by: (Signature)	Date: 9-14-95 Time: 1336	Intact
[signature]	[signature]				
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
ATTECH					
ATTECH	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact

SAMPLER REMARKS:	Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal #	Data Results to:		

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1715-173	ARTECH / Minneapolis	Minneapolis ANGB

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
MW-4-Dup	1-21-95 1420			3-VOA	WATER	HCL	VOC 8240	
				2-VOA	WATER	HCL	TPH-DRO 8015M	
MW-4-Dup	1-21-95 1420			1-Plastic	WATER	HCL	TPH-DRO 8015M	
MW-4	1-21-95 1410			3-VOA	WATER	HCL	VOC 8240	
				2-VOA	WATER	HCL	TPH-DRO 8015M	
MW-4	1-21-95 1410			1-Plastic	WATER	HCL	TPH-DRO 8015M	
FT1-002-MW	1-21-95 1310			3-VOA	WATER	HCL	VOC 8240	
				2-VOA	WATER	HCL	TPH-DRO 8015M	
FT1-002-MW	1-21-95 1310			1-Plastic	WATER	NONE	TPH-DRO 8015M	
FT1-COMP	1-21-95 1130			3-VOA	WATER	HCL	VOC 8240	
				2-VOA	WATER	HCL	TPH-DRO 8015M	
FT1-001-MW	1-21-95 1130			1-Plastic	WATER	HCL	TPH-DRO 8015M	
TRIP BLANK	1-21-95			3-VOA	WATER	HCL	VOC 8240	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 1-21-95 Time: 1752	Received by: (Signature)	Date: 1-21-95 Time: 1752	Intact Yes
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
ARTECH	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS:			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal #			Data Results to:		

AIR F.II #: [illegible]

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-113	[illegible]	[illegible]

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
MW-4	1-21-95 1410			[illegible]	WATER	HNO3	[illegible]	
MW-4-DUP	1-21-95 1420			"	"	"	"	
[illegible]	[illegible]			"	"	"	"	
[illegible]	1-21-95 1430			"	"	"	"	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 1-21-95 Time: 1752	Received by: (Signature)	Date: 1-21-95 Time: 1752	Intact 1 YES
[illegible]					
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
[illegible]	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
[illegible]					

SAMPLER REMARKS:	Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal #	Data Results to:		

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

664 3030041

Project No.	Client/Project Name	Project Location
1315-197	OPTECH / Memphis	Memphis ANGB

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
651-001 MW B	10/26/95 1605			3 glass VOC	WATER	HCl	VOC - 8240	
"	"			3-glass	"	"	TPH- GRO WDNR	
"	"			1-glass	"	HCl	TPH- DRO WDNR	
"	"			1 Amber	"	NONE	Ind SW- 6010	
				2-glass	"	HCl	Trip Blank	

Samplers: (Signature)	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
[signature]	[signature] OPTECH	Date: 10/26 Time: 1730	Carole Benson	Date: 10/26 Time: 1730	
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS:			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal #			Data Results to:		

FedEx. USA Airbill

Tracking Number 6642912426

Sender's Copy

354 1000 43697480 5205M

From (please print)

-95 Sender's FedEx Account Number

Name Joe Byrd, JR Phone (210) 731-0000

PTECH Dept./Floor Suite/Room

00 NW Loop 410, #230

Antonio State TX Zip 78229

Optional Billing Reference Information (First 24 characters will appear on invoice) HENV

To (please print)

KAREN SATERfield Phone (713-660-0901

UTHERN PETROLEUM LAB Dept./Floor Suite/Room

Address (No FedEx location, no address here) HOLD @ 6702 TRAVIS (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.)

STON State TX Zip 77002

"Next" Service check here

Monday Saturday (Not available at all locations)

For Saturday Delivery check here (Extra Charge. Not available to all locations)

4 Service*

- [ ] FedEx Priority Overnight (Next business morning)
- [X] FedEx Standard Overnight (Next business afternoon)
- [ ] FedEx 2Day (Second business day)
- [ ] FedEx Govt. Overnight (Authorized user only)
- [ ] FedEx Overnight Freight
- [ ] FedEx 2Day Freight (For packages over 150 pounds. Call for delivery schedule.)

*Delivery commitment may be later in some areas.

5 Packaging

- [ ] FedEx Letter*
- [ ] FedEx Pak*
- [ ] FedEx Box
- [ ] FedEx Tube
- [X] Other Packaging

*Declared value limit $500.

6 Special Handling

Does this shipment contain dangerous goods? [X] No [ ] Yes (As per attached Shipper's Declaration) [ ] Yes (Shipper's Declaration not required)

- [ ] Dry Ice — Dry Ice, 9, UN 1845 III ____ x ____ kg. 904 (Dangerous Goods Shipper's Declaration not required)
- CA [ ] Cargo Aircraft Only

7 Payment

Bill to: [ ] Sender (Account no. in section 1 will be billed) [ ] Recipient [X] Third Party [ ] Credit Card [ ] Cash/Check (Enter FedEx account no. or Credit Card no. below)

FedEx Account No. 1007-9834-4

Credit Card No. ____ Exp. Date ____

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	38 LB	$ .00	$

* When declaring a value higher than $100 per package, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY section for further information.

8 Release Signature

J Byrd JR

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

194

Declared Value, and Limit of Liability – By using this Airbill, you agree to the current Service Guide or U.S. Government Service Guide. Both are back of Sender's Copy of this airbill for information and additional terms. for any claim in excess of $100 per package whether the result of loss, very, misdelivery, or misinformation, unless you declare a higher value, ge, and document your actual loss in a timely manner. Your right to recover from us for any loss includes intrinsic value of the package, loss of sales, interest, profit, attorney's fees, costs, and other forms of damage, whether direct, incidental, consequential, or special, and is limited to the greater of $100 or the declared value but cannot exceed actual documented loss. The maximum declared value for any FedEx Letter and FedEx Pak is $500. Federal Express may, upon your request, and with some limitations, refund all transportation charges paid.

See the FedEx Service Guide for further details.

Go·FedEx

The World On Time

Rev. Date 5/95 • PART #146162
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FedEx USA Airbill

Tracking Number 6642912430

Sender's Copy

355 1000 43697480 5205M

From (please print)

Date 9-19-95 Sender's FedEx Account Number

Sender's Name Joe Byrd, JR Phone (210) 731-0000

Company OPTECH Dept./Floor Suite/Room

Address 4100 NW Loop 410, #230

City SAN Antonio State TX Zip 78229

2 Your Internal Billing Reference Information (Optional) (First 24 characters will appear on invoice) HENV

3 To (please print)

Recipient's Name KAREN Sater field Phone (713)660-0901

Company SOUTHERN PETROLEUM LAB Dept./Floor Suite/Room

Address (To "HOLD" at FedEx location, print FedEx address here) HOLD @ 4702 TRAVIS (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes)

City HOUSTON State TX Zip 77002

For "HOLD" Service check here
☐ Weekday ☐ Saturday (Not available at all locations)

For Saturday Delivery check here
☐ (Extra Charge. Not available to all locations)

4 Service*

☐ FedEx Priority Overnight (Next business morning)
☒ FedEx Standard Overnight (Next business afternoon)
☐ FedEx 2Day (Second business day)
☐ FedEx Govt. Overnight (Authorized user only)
☐ FedEx Overnight Freight
☐ FedEx 2Day Freight
(For packages over 150 pounds. Call for delivery schedule.)

*Delivery commitment may be later in some areas.

5 Packaging

☐ FedEx Letter* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☒ Other Packaging
*Declared value limit $500.

6 Special Handling

Does this shipment contain dangerous goods? ☒ No ☐ Yes (As per attached Shipper's Declaration) ☐ Yes (Shipper's Declaration not required)

☐ Dry Ice Dry Ice, 9, UN 1845 III ____ x ____ kg. 904 (Dangerous Goods Shipper's Declaration not required)

CA ☐ Cargo Aircraft Only

7 Payment

Bill to: ☐ Sender (Account no. in section 1 will be billed) ☐ Recipient ☒ Third Party ☐ Credit Card ☐ Cash/Check
(Enter FedEx account no. or Credit Card no. below)

FedEx Account No. 1007-9834-4

Credit Card No. Exp. Date

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	61 LBS	$ .00	$

*When declaring a value higher than $100 per package, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY section for further information

8 Release Signature

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

194

Service Conditions, Declared Value, and Limit of Liability – By using this Airbill, you agree to the service conditions in our current Service Guide or U.S. Government Service Guide. Both are available on request. See back of Sender's Copy of this airbill for information and additional terms. We will not be responsible for any claim in excess of $100 per package whether the result of loss, damage, or delay, non delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss in a timely manner. Your right to recover from us for any loss includes intrinsic value of the package, loss of sales, interest, profit, attorney's fees, costs, and other forms of damage, whether direct, incidental, consequential, or special, and is limited to the greater of $100 or the declared value but cannot exceed actual documented loss. The maximum declared value for any FedEx Letter and FedEx Pak is $500. Federal Express may, upon your request, and with some limitations, refund all transportation charges paid.

See the FedEx Service Guide for further details.

Questions?
Call 1·800·Go·FedEx

The World On Time

Rev. Date 5/95 • PART #146162
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FedEx
Federal Express

USE THIS AIRBILL FOR SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U.S. LOCATIONS.
QUESTIONS? CALL 800-238-5355 TOLL FREE.

PACKAGE TRACKING NUMBER 5397592314

5397592314

SENDER'S COPY

SENDER'S FEDERAL EXPRESS ACCOUNT NUMBER 1 _____ Date 8-17-95

SENDER'S COPY

From (Your Name) Please Print	Your Phone Number (Very Important)	To (Recipient's Name) Please Print	Recipient's Phone Number (Very Important)
Russell Cason	(210) 731-0000	2	(713) 660-0901

Company	Department/Floor No.	Company	Department/Floor No.
OIL Tech		SOUTHERN PETROLEUM LAB	

Street Address	Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.)
4100 N.W. Loop 410, STE 230	8880 INTERCHANGE

City	State	ZIP Required	City	State	ZIP Required
San Antonio	TX	78229	HOUSTON	TX	77084

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.)
MRN

H *IF HOLD AT FEDEX LOCATION, Print FEDEX Address Here
Street Address 4702 TRAVIS
City HOUSTON, State TX ZIP Required 77002

3 PAYMENT 1 ☐ Bill Sender 2 ☒ Bill Recipient's FedEx Acct. No. 3 ☐ Bill 3rd Party FedEx Acct. No. 4 ☐ Bill Credit Card
5 ☐ Cash/Check Acct./Credit Card No. 1003834 Exp. Date /

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning)	Standard Overnight (Delivery by next business afternoon. No Saturday delivery†).
11 ☐ OTHER PACKAGING	51 ☒ OTHER PACKAGING
16 ☐ FEDEX LETTER*	56 ☐ FEDEX LETTER*
12 ☐ FEDEX PAK*	52 ☐ FEDEX PAK*
13 ☐ FEDEX BOX	53 ☐ FEDEX BOX
14 ☐ FEDEX TUBE	54 ☐ FEDEX TUBE
Economy Two-Day (Delivery by second business day†)	**Government Overnight** (Restricted for authorized users only)
30 ☐ ECONOMY*	46 ☐ GOVT LETTER
	41 ☐ GOVT PACKAGE

* Economy Letter Rate not available. Minimum charge: One pound Economy rate.

Freight Service (for packages over 150 lbs.)
70 ☐ OVERNIGHT FREIGHT** (Confirmed reservation required)
80 ☐ TWO-DAY FREIGHT**

†Delivery commitment may be later in some areas. *Declared Value Limit $500. **Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)

Weekday Service
1 ☒ HOLD AT FEDEX LOCATION WEEKDAY (Fill in Section H)
2 ☐ DELIVER WEEKDAY

Saturday Service
31 ☐ HOLD AT FEDEX LOCATION SATURDAY (Fill in Section H)
3 ☐ DELIVER SATURDAY (Extra charge) (Not available to all locations)
9 ☐ SATURDAY PICK-UP (Extra charge)

Special Handling
4 ☐ DANGEROUS GOODS (Extra charge)
6 ☐ DRY ICE Dangerous Goods Shipper's Declaration not required
Dry Ice, 9, UN 1845, _____ X _____ kg. 904 III
☐ DESCRIPTION
12 ☐ HOLIDAY DELIVERY (If offered) (Extra charge)

6 PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
Total	Total	Total

DIM SHIPMENT (Chargeable Weight)
☐ _____ lbs.
L x W x H

Received At
1 ☐ Regular Stop 3 ☐ Drop Box
2 ☐ On-Call Stop 4 ☐ B.S.C. 5 ☐ Station

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

Use of this airbill constitutes your agreement to the service conditions in our current Service Guide, available upon request. See back of sender's copy of this airbill for information. Service conditions may vary for Government Overnight Service. See U.S. Government Service Guide for details.

We will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss for a timely claim. Limitations found in the current Federal Express Service Guide apply. Your right to recover from Federal Express for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the declared value specified to the left. Recovery cannot exceed actual documented loss. The maximum Declared Value for FedEx Letter and FedEx Pak packages is $500.

In the event of untimely delivery, Federal Express will at your request and with some limitations refund all transportation charges paid. See Service Guide for further information.

7 Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.

Release Signature: _____

Federal Express Use	
Base Charges	
Declared Value Charge	
Other 1	
Other 2	
Total Charges	

REVISION DATE 4/94
PART #145412 FXEM 4/95
FORMAT #160

160

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FedEx Express

USE THIS AIRBILL FOR SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U.S. LOCATIONS.
QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER **5397592292**

5397592292

SENDER'S COPY

SENDER'S COPY

1 SENDER'S FEDERAL EXPRESS ACCOUNT NUMBER

Date: 8-17-95

From (Your Name) Please Print: Ross Cason
Your Phone Number (Very Important): (210) 731-2000
Company: OPTECH
Department/Floor No.:
Street Address: 4100 NW Loop 410, STE 230
City: San Antonio
State: TX
ZIP Required: 78229

2 To (Recipient's Name) Please Print:
Recipient's Phone Number (Very Important): (713) 660-0901
Company: SOUTHERN PETROLEUM LAB
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 4000 INTERCHANGE
City: HOUSTON
State: TX
ZIP Required: 77096

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): HRNV

H IF HOLD AT FEDEX LOCATION, Print FEDEX Address Here
Street Address: 4702 TRAVIS
City: HOUSTON,
State: TX
ZIP Required: 77002

3 PAYMENT 1 [ ] Bill Sender 2 [X] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card
5 [ ] Cash/Check Acct./Credit Card No. 1007 98244 Exp. Date

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)
- 11 [ ] OTHER PACKAGING
- 16 [ ] FEDEX LETTER*
- 12 [ ] FEDEX PAK*
- 13 [ ] FEDEX BOX
- 14 [ ] FEDEX TUBE

Standard Overnight (Delivery by next business afternoon to selected locations†)
- 5 [X] OTHER PACKAGING
- 56 [ ] FEDEX LETTER*
- 52 [ ] FEDEX PAK*
- 53 [ ] FEDEX BOX
- 54 [ ] FEDEX TUBE

Economy Two-Day (Delivery by second business day †)
- 30 [X] ECONOMY*

* Economy Letter Rate not available. Minimum charge: One pound Economy rate.

Government Overnight (Restricted for authorized users only)
- 46 [ ] GOVT LETTER
- 41 [ ] GOVT PACKAGE

Freight Service (for packages over 150 lbs.)
- 70 [ ] OVERNIGHT FREIGHT** (Confirmed reservation required)
- 80 [ ] TWO-DAY FREIGHT**

† Delivery commitment may be later in some areas.
*Declared Value Limit $500.
**Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)

Weekday Service
- 1 [X] HOLD AT FEDEX LOCATION WEEKDAY (Fill in Section H)
- 2 [ ] DELIVER WEEKDAY

Saturday Service
- 31 [ ] HOLD AT FEDEX LOCATION SATURDAY (Fill in Section H)
- 3 [ ] DELIVER SATURDAY (Extra charge) (Not available to all locations)
- 9 [ ] SATURDAY PICK-UP (Extra charge)

Special Handling
- 4 [ ] DANGEROUS GOODS (Extra charge)
- 6 [ ] DRY ICE Dangerous Goods Shipper's Declaration not required
  Dry Ice, 9, UN 1845, ____ X ____ kg, 904 III
- [ ] DESCRIPTION
- 12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
1		
Total 1	Total 8	Total

DIM SHIPMENT (Chargeable Weight) [ ] ____ lbs.
L x W x H

Received At
- 1 [ ] Regular Stop
- 2 [ ] On-Call Stop
- 3 [ ] Drop Box
- 4 [ ] B.S.C.
- 5 [ ] Station

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

Use of this airbill constitutes your agreement to the service conditions in our current Service Guide, available upon request. See back of sender's copy of this airbill for information. Service conditions may vary for Government Overnight Service. See U.S. Government Service Guide for details.

We will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss for a timely claim. Limitations found in the current Federal Express Service Guide apply. Your right to recover from Federal Express for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the declared value specified to the left. Recovery cannot exceed actual documented loss. The maximum Declared Value for FedEx Letter and FedEx Pak packages is $500.

In the event of untimely delivery, Federal Express will at your request and with some limitations refund all transportation charges paid. See Service Guide for further information.

7 Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.

Release Signature: _____

Federal Express Use

Base Charges	
Declared Value Charge	
Other 1	
Other 2	
Total Charges	

REVISION DATE 4/94
PART #145412 FXEM 4/95
FORMAT #160
160

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Federal Express

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USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U.S. LOCATIONS.
QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 539

5124M 5397592303

SENDER'S COPY

SENDER'S COPY

1 SENDER'S FEDERAL EXPRESS ACCOUNT NUMBER

Date: 8-17-95

From (Your Name) Please Print: Russell Cason
Your Phone Number (Very Important): (210) 731-0000
Company: OPTECH
Department/Floor No.:
Street Address: 4100 N.W. Loop 410, STE. 230
City: San Antonio
State: TX
ZIP Required: 78229

2 To (Recipient's Name) Please Print:
Recipient's Phone Number: (713) 6606
Company: SOUTHERN PETROLEUM LAB
Department:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 8640 INTERCHANGE
City: HOUSTON
State: TX
ZIP Required: 77054

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.)
HSNV

H IF HOLD AT FEDEX LOCATION, Print FEDEX Address Here
Street Address: 4702 TRAVIS
City: HOUSTON,
State: TX
ZIP Required: 77002

3 PAYMENT
1 ☐ Bill Sender
2 ☒ Bill Recipient's FedEx Acct. No.
3 ☐ Bill 3rd Party FedEx Acct. No.
4 ☐ Bill Credit Card
5 ☐ Cash/Check
Acct./Credit Card No. 1007983444
Exp. Date

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)
11 ☐ OTHER PACKAGING
16 ☐ FEDEX LETTER*
12 ☐ FEDEX PAK*
13 ☐ FEDEX BOX
14 ☐ FEDEX TUBE

Standard Overnight (Delivery by next business afternoon. No Saturday delivery†)
51 ☒ OTHER PACKAGING
56 ☒ FEDEX LETTER*
52 ☐ FEDEX PAK*
53 ☐ FEDEX BOX
54 ☐ FEDEX TUBE

Economy Two-Day (Delivery by second business day †)
30 ☐ ECONOMY*
* Economy Letter Rate not available. Minimum charge: One pound Economy rate.

Government Overnight (Restricted for authorized users only)
46 ☐ GOVT LETTER
41 ☐ GOVT PACKAGE

Freight Service (for packages over 150 lbs.)
70 ☐ OVERNIGHT FREIGHT** (Confirmed reservation required)
80 ☐ TWO-DAY FREIGHT**
† Delivery commitment may be later in some areas.
*Declared Value Limit $500.
**Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)

Weekday Service
1 ☒ HOLD AT FEDEX LOCATION WEEKDAY (Fill in Section H)
2 ☐ DELIVER WEEKDAY

Saturday Service
31 ☐ HOLD AT FEDEX LOCATION SATURDAY (Fill in Section H)
3 ☐ DELIVER SATURDAY (Extra charge) (Not available to all locations)
9 ☐ SATURDAY PICK-UP (Extra charge)

Special Handling
4 ☐ DANGEROUS GOODS (Extra charge)
6 ☐ DRY ICE Dangerous Goods Shipper's Declaration not required
Dry Ice, 9, UN 1845, ____ X ____ kg, 904 III
☐ DESCRIPTION
12 ☐ HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
Total 1	Total 44	Total

DIM SHIPMENT (Chargeable Weight)
☐ ____ lbs.
L x W x H

Received At
1 ☐ Regular Stop
2 ☐ On-Call Stop
3 ☐ Drop Box
4 ☐ B.S.O.
5 ☒ Station

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

Use of this airbill constitutes your agreement to the service conditions in our current Service Guide, available upon request. See back of sender's copy of this airbill for information. Service conditions may vary for Government Overnight Service. See U.S. Government Service Guide for details.

We will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss for a timely claim. Limitations found in the current Federal Express Service Guide apply. Your right to recover from Federal Express for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the declared value specified to the left. Recovery cannot exceed actual documented loss. The maximum Declared Value for FedEx Letter and FedEx Pak packages is $500.

In the event of untimely delivery, Federal Express will at your request and with some limitations refund all transportation charges paid. See Service Guide for further information.

7 Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.

Release Signature: _____

Federal Express Use

Base Charges	
Declared Value Charge	
Other 1	
Other 2	
Total Charges	

REVISION DATE 4/94
PART #145412 FXEM 4/95
FORMAT #160

160

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FedEx® USA Airbill

Tracking Number 6896121304

Sender's Copy

1 From (please print)

Date 8-16-95 Sender's FedEx Account Number _____

Sender's Name Russell Cason Phone (210) 731-0000

Company OPTECH Dept./Floor Suite/Room _____

Address 4100 N.W. Loop 410, STE. 230

City San Antonio State TX Zip 78229

2 Your Internal Billing Reference Information (Optional) (First 24 characters will appear on invoice) HENV

3 To (please print)

Recipient's Name Southern Petroleum Labs Phone (713) 660-0901

Company Southern Petroleum Labs Dept./Floor Suite/Room _____

Address (To "HOLD" at FedEx location, print FedEx address here) 4702 Travis (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.)

City Houston State TX Zip 77002

For "HOLD" Service check here
☑ Weekday ☐ Saturday (Not available at all locations)

For Saturday Delivery check here
☐ (Extra Charge. Not available to all locations)

4 Service*

☐ FedEx Priority Overnight (Next business morning) ☑ FedEx Standard Overnight (Next business afternoon) ☐ FedEx 2Day (Second business day)
☐ FedEx Govt. Overnight (Authorized user only)
☐ FedEx Overnight Freight ☐ FedEx 2Day Freight
(For packages over 150 pounds. Call for delivery schedule.)

*Delivery commitment may be later in some areas.

5 Packaging

☐ FedEx Letter* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☑ Other Packaging
*Declared value limit $500.

6 Special Handling

Does this shipment contain dangerous goods? ☑ No ☐ Yes (As per attached Shipper's Declaration) ☐ Yes (Shipper's Declaration not required)

☐ Dry Ice Dry Ice, 9, UN 1845 III _____ x _____ kg. 904 (Dangerous Goods Shipper's Declaration not required)

CA ☐ Cargo Aircraft Only

7 Payment

Bill to: ☐ Sender (Account no. in section 1 will be billed) ☑ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check
(Enter FedEx account no. or Credit Card no. below)

FedEx Account No. 100798 34-4

Credit Card No. _____ Exp. Date _____

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	75	$ .00	$

*When declaring a value higher than $100 per package, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY section for further information.

8 Release Signature

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

194

JLG

Service Conditions, Declared Value, and Limit of Liability – By using this Airbill, you agree to the service conditions in our current Service Guide or U.S. Government Service Guide. Both are available on request. See back of Sender's Copy of this airbill for information and additional terms. We will not be responsible for any claim in excess of $100 per package whether the result of loss, damage, or delay, non delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss in a timely manner. Your right to recover from us for any loss includes intrinsic value of the package, loss of sales, interest, profit, attorney's fees, costs, and other forms of damage, whether direct, incidental, consequential, or special, and is limited to the greater of $100 or the declared value but cannot exceed actual documented loss. The maximum declared value for any FedEx Letter and FedEx Pak is $500. Federal Express may, upon your request, and with some limitations, refund all transportation charges paid.

See the FedEx Service Guide for further details.

Questions?
Call 1·800·Go·FedEx

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GOFE 7/95

FedEx USA Airbill

Tracking Number 6896121315

Sender's Copy

1 From (please print)

Date 8-10-94 Sender's FedEx Account Number

Sender's Name Russell Cason Phone (210) 731-0000

Company Op Tech Dept/Floor Suite/Room

Address 4100 N.W. Loop 410, STE 230

City San Antonio State Tx Zip 78229

2 Your Internal Billing Reference Information (Optional) (First 24 characters will appear on invoice) HENV

3 To (please print)

Recipient's Name Southern Petroleum Labs Phone (713) 660-0901

Company Southern Petroleum Labs Dept/Floor Suite/Room

Address (To "HOLD" at FedEx location, print FedEx address here) (We Cannot Deliver to P.O. Boxes or P.O. ZIP Codes.) 4702 Travis

City Houston State Tx Zip 77002

For "HOLD" Service check here
☑ Weekday ☐ Saturday (Not available at all locations)

For Saturday Delivery check here
☐ (Extra Charge Not available to all locations)

4 Service*

☐ FedEx Priority Overnight (Next business morning) ☑ FedEx Standard Overnight (Next business afternoon) ☐ FedEx 2Day (Second business day)
☐ FedEx Govt. Overnight (Authorized user only)
☐ FedEx Overnight Freight ☐ FedEx 2Day Freight
(For packages over 150 pounds. Call for delivery schedule.)

*Delivery commitment may be later in some areas.

5 Packaging

☐ FedEx Letter* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☑ Other Packaging
*Declared value limit $500.

6 Special Handling

Does this shipment contain dangerous goods? ☑ No ☐ Yes (As per attached Shipper's Declaration) ☐ Yes (Shipper's Declaration not required)

☐ Dry Ice Dry Ice, 9, UN 1845 III ____ x ____ kg. 904 (Dangerous Goods Shipper's Declaration not required)

CA ☐ Cargo Aircraft Only

7 Payment

Bill to: ☐ Sender (Account no. in section 1 will be billed) ☑ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check
(Enter FedEx account no. or Credit Card no. below)

FedEx Account No. 100798 34-4

Credit Card No. Exp. Date

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	53	$ .00	$

*When declaring a value higher than $100 per package, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY section for further information.

8 Release Signature

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

194

Service Conditions, Declared Value, and Limit of Liability – By using this Airbill, you agree to the service conditions in our current Service Guide or U.S. Government Service Guide. Both are available on request. See back of Sender's Copy of this airbill for information and additional terms. You must be responsible for any claim in excess of $100 per package whether the result of loss, damage, non delivery, misdelivery, or misinformation, unless you declare a higher value, pay any additional charge, and document your actual loss in a timely manner. Your right to recover from us for any loss includes intrinsic value of the package, loss of sales, interest, profit, attorney's fees, costs, and other forms of damage, whether direct, incidental, consequential, or special, and is limited to the greater of $100 or the declared value but cannot exceed actual documented loss. The maximum declared value for any FedEx Letter and FedEx Pak is $500. Federal Express may, upon your request, and with some limitations, refund all transportation charges paid.

See the FedEx Service Guide for further details.

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CBEL 7.95

FedEx USA Airbill

Tracking Number 6896121326

Sender's Copy

1 From (please print)

Date 8-9-95 Sender's FedEx Account Number _____

Sender's Name Russ Cason Phone (210) 731-0000

Company OP Tech Dept./Floor Suite/Room _____

Address 4100 N.W. Loop 410, STE 230

City San Antonio State TX Zip 78229

2 Your Internal Billing Reference Information (Optional) (First 24 characters will appear on invoice) HENV

3 To (please print)

Recipient's Name Southern Petroleum Labs Phone (713) 660-0901

Company 11 Dept./Floor Suite/Room _____

Address (To "HOLD" at FedEx location, print FedEx address here) (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes) 4702 Terminal

City Houston State TX Zip 77002

For "HOLD" Service check here

☑ Weekday ☐ Saturday (Not available at all locations)

For Saturday Delivery check here

☐ (Extra Charge. Not available to all locations)

4 Service*

☐ FedEx Priority Overnight (Next business morning) ☑ FedEx Standard Overnight (Next business afternoon) ☐ FedEx 2Day (Second business day)

☐ FedEx Govt. Overnight (Authorized user only)

☐ FedEx Overnight Freight ☐ FedEx 2Day Freight (For packages over 150 pounds. Call for delivery schedule.)

*Delivery commitment may be later in some areas.

5 Packaging

☐ FedEx Letter* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☑ Other Packaging

*Declared value limit $500.

6 Special Handling

Does this shipment contain dangerous goods? ☑ No ☐ Yes (As per attached Shipper's Declaration) ☐ Yes (Shipper's Declaration not required)

☐ Dry Ice Dry Ice, 9, UN 1845 III _____ x _____ kg. 904 (Dangerous Goods Shipper's Declaration not required)

CA ☐ Cargo Aircraft Only

7 Payment

Bill to: ☐ Sender (Account no. in section 1 will be billed) ☑ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check (Enter FedEx account no. or Credit Card no. below)

FedEx Account No. 100079834-4

Credit Card No. _____ Exp. Date _____

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	39	$ .00	$

*When declaring a value higher than $100 per package, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY section for further information.

8 Release Signature

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

194

Service Conditions, Declared Value, and Limit of Liability – By using this Airbill, you agree to the service conditions in our current Service Guide or U.S. Government Service Guide. Both are available on request. See back of Sender's Copy of this airbill for information and additional terms. We will not be responsible for any claim in excess of $100 per package whether the result of loss, damage, or delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss in a timely manner. Your right to recover from us for any loss includes intrinsic value of the package, loss of sales, interest, profit, attorney's fees, costs, and other forms of damage, whether direct, incidental, consequential, or special, and is limited to the greater of $100 or the declared value but cannot exceed actual documented loss. The maximum declared value for any FedEx Letter and FedEx Pak is $500. Federal Express may, upon your request, and with some limitations, refund all transportation charges paid.

See the FedEx Service Guide for further details.

Questions?
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FedEx USA Airbill

Tracking Number 689612133O

Sender's Copy

1 From (please print)

Date 8-9-95 Sender's FedEx Account Number ~~100798[illegible]~~

Sender's Name Russell Cason Phone (210) 731-0000

Company OPTech Dept./Floor Suite/Room

Address 4100 N.W. Loop 410, STE 230

City San Antonio State TX. Zip 78229

2 Your Internal Billing Reference Information (Optional) (First 24 characters will appear on invoice) HENV

3 To (please print)

Recipient's Name Southern Petroleum Labs Phone (713) 660-0901

Company 11 Dept./Floor Suite/Room

Address (To "HOLD" at FedEx location, print FedEx address here) (Will not deliver to P.O. Boxes or P.O. Zips) 4702 Travis

City Houston State TX Zip 77002

For "HOLD" Service check here

☑ Weekday ☐ Saturday (Not available at all locations)

For Saturday Delivery check here

☐ (Extra Charge. Not available to all locations)

4 Service*

☐ FedEx Priority Overnight (Next business morning) ☑ FedEx Standard Overnight (Next business afternoon) ☐ FedEx 2Day (Second business day)

☐ FedEx Govt. Overnight (Authorized user only)

☐ FedEx Overnight Freight ☐ FedEx 2Day Freight (For packages over 150 pounds. Call for delivery schedule.)

*Delivery commitment may be later in some areas

5 Packaging

☐ FedEx Letter* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☑ Other Packaging

*Declared value limit $500.

6 Special Handling

Does this shipment contain dangerous goods? ☑ No ☐ Yes (As per attached Shipper's Declaration) ☐ Yes (Shipper's Declaration not required)

☐ Dry Ice Dry Ice, 9, UN 1845 III ____ x ____ kg. 904 (Dangerous Goods Shipper's Declaration not required)

CA ☐ Cargo Aircraft Only

7 Payment

Bill to: ☐ Sender (Account no. in section 1 will be billed) ☑ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check (Enter FedEx account no. or Credit Card no. below)

FedEx Account No. 10079834-4

Credit Card No. Exp. Date

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	42	$ .00	$

*When declaring a value higher than $100 per package, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY section for further information.

8 Release Signature

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

194

Service Conditions, Declared Value, and Limit of Liability – By using this Airbill, you agree to the service conditions in our current Service Guide or U.S. Government Service Guide. Both are available on request. See back of Sender's Copy of this airbill for information and additional terms. We will not be responsible for any claim in excess of $100 per package whether the result of loss, damage, or delay, non delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss in a timely manner. Your right to recover from us for any loss includes intrinsic value of the package, loss of sales, interest, profit, attorney's fees, costs, and other forms of damage, whether direct, incidental, consequential, or special, and is limited to the greater of $100 or the declared value but cannot exceed actual documented loss. The maximum declared value for any FedEx Letter and FedEx Pak is $500. Federal Express may, upon your request, and with some limitations, refund all transportation charges paid.

See the FedEx Service Guide for further details.

Questions?
Call 1·800·Go·FedEx

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GROUP 2 95

FedEx USA Airbill

Tracking Number 6896121341

Sender's Copy

1 From (please print)

Date 8-8-95 Sender's FedEx Account Number —

Sender's Name Russell Cason Phone (210) 731-0000

Company Operational Technologies Dept./Floor Suite/Room

Address 4100 N.W. Loop 410 STE 230

City San Antonio State Tx. Zip 78229

2 Your Internal Billing Reference Information
(Optional) (First 24 characters will appear on invoice)

3 To (please print)

Recipient's Name Southern Petroleum Labs Phone (713) 690-0901

Company Southern Petroleum Labs Dept./Floor Suite/Room

Address (To "HOLD" at FedEx location, print FedEx address here) (We cannot deliver to P.O. Boxes or P.O. ZIP Codes.) 4702 Travis

City Houston State Tx Zip 77002

For "HOLD" Service check here
☑ Weekday ☐ Saturday (Not available at all locations)

For Saturday Delivery check here
☐ (Extra Charge. Not available to all locations)

4 Service*

☐ FedEx Priority Overnight (Next business morning) ☑ FedEx Standard Overnight (Next business afternoon) ☐ FedEx 2Day (Second business day)
☐ FedEx Govt. Overnight (Authorized user only)
☐ FedEx Overnight Freight ☐ FedEx 2Day Freight
(For packages over 150 pounds. Call for delivery schedule.)

*Delivery commitment may be later in some areas

5 Packaging

☐ FedEx Letter* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☑ Other Packaging
*Declared value limit $500

6 Special Handling

Does this shipment contain dangerous goods? ☑ No ☐ Yes (As per attached Shipper's Declaration) ☐ Yes (Shipper's Declaration not required)

☐ Dry Ice Dry Ice, 9, UN 1845 III ____ x ____ kg. 904 (Dangerous Goods Shipper's Declaration not required)

CA ☐ Cargo Aircraft Only

7 Payment

Bill to: ☐ Sender (Account no. in section 1 will be billed) ☑ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check
(Enter FedEx account no. or Credit Card no. below)

FedEx Account No. 1007934-4

Credit Card No. ____ Exp. Date ____

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	~~37.50~~ 38	$ — .00	$

* When declaring a value higher than $100 per package, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY section for further information.

8 Release Signature

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

194

Service Conditions, Declared Value, and Limit of Liability – By using this Airbill, you agree to the service conditions in our current Service Guide or U.S. Government Service Guide. Both are available on request. See back of Sender's Copy of this airbill for information and additional terms. We will not be responsible for any claim in excess of $100 per package whether the result of loss, damage, or delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss in a timely manner. Your right to recover from us for any loss includes intrinsic value of the package, loss of sales, interest, profit, attorney's fees, costs, and other forms of damage, whether direct, incidental, consequential, or special, and is limited to the greater of $100 or the declared value but cannot exceed actual documented loss. The maximum declared value for any FedEx Letter and FedEx Pak is $500. Federal Express may, upon your request, and with some limitations, refund all transportation charges paid.

See the FedEx Service Guide for further details.

Questions?
Call 1-800-Go-FedEx

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GOLF 7/95

FEDERAL EXPRESS

USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON-U.S. LOCATIONS.
QUESTIONS? CALL 800-238-5355 TOLL FREE.

PACKAGE TRACKING NUMBER 2344451572

2344451572

SENDER'S COPY

SENDER'S COPY

1 SENDER'S FEDERAL EXPRESS ACCOUNT NUMBER | Date: 8-7-95

From (Your Name) Please Print: Russell Cason
Your Phone Number (Very Important): (210) 731-0000
Company: Operational Technologies
Department/Floor No.:
Street Address: 4100 N.W. Loop 410 Suite 220
City: San Antonio | State: Tx. | ZIP Required: 78229

2 To (Recipient's Name) Please Print:
Recipient's Phone Number (Very Important): (713) 660-0401
Company: Southern Petroleum Laboratories
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 8880 Interchange
City: Houston | State: Tx. | ZIP Required: 77054

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.)
HENW #

H IF HOLD AT FEDEX LOCATION, Print FEDEX Address Here
Street Address: 4702 Travis
City: Houston | State: TX | ZIP Required: 77002

3 PAYMENT 1 ☐ Bill Sender 2 ☒ Bill Recipient's FedEx Acct. No. 3 ☐ Bill 3rd Party FedEx Acct. No. 4 ☐ Bill Credit Card
5 ☐ Cash/Check
Acct./Credit Card No.: 100798344
Exp. Date: /

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)	Standard Overnight (Delivery by next business afternoon. No Saturday delivery†)
11 ☐ OTHER PACKAGING	51 ☒ OTHER PACKAGING
16 ☐ FEDEX LETTER*	56 ☐ FEDEX LETTER*
12 ☐ FEDEX PAK*	52 ☐ FEDEX PAK*
13 ☐ FEDEX BOX	53 ☐ FEDEX BOX
14 ☐ FEDEX TUBE	54 ☐ FEDEX TUBE
Economy Two-Day (Delivery by second business day †)	**Government Overnight** (Restricted for authorized users only)
30 ☐ ECONOMY*	46 ☐ GOVT LETTER
	41 ☐ GOVT PACKAGE

* Economy Letter Rate not available. Minimum charge: One pound Economy rate.

Freight Service (for packages over 150 lbs.)
70 ☐ OVERNIGHT FREIGHT** (Confirmed reservation required) 80 ☐ TWO-DAY FREIGHT**
† Delivery commitment may be later in some areas.
** Declared Value Limit $500. Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)

Weekday Service
1 ☒ HOLD AT FEDEX LOCATION WEEKDAY (Fill in Section H)
2 ☐ DELIVER WEEKDAY

Saturday Service
31 ☐ HOLD AT FEDEX LOCATION SATURDAY (Fill in Section H)
3 ☐ DELIVER SATURDAY (Extra charge) (Not available to all locations)
9 ☐ SATURDAY PICK-UP (Extra charge)

Special Handling
4 ☐ DANGEROUS GOODS (Extra charge)
6 ☐ DRY ICE Dangerous Goods Shipper's Declaration not required
Dry Ice, 9, UN 1845, _____ X _____ kg. 904 III
☐ DESCRIPTION
12 ☐ HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
1	63	
Total 1	Total 63	Total

DIM SHIPMENT (Chargeable Weight) ☐ _____ lbs.
L x W x H

Received At
1 ☐ Regular Stop 3 ☐ Drop Box
2 ☐ On-Call Stop 4 ☐ B.S.C. 5 ☐ Station

7 Release Signature: _____

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

Use of this airbill constitutes your agreement to the service conditions in our current Service Guide, available upon request. See back of sender's copy of this airbill for information. Service conditions may vary for Government Overnight Service. See U.S. Government Service Guide for details.

We will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss for a timely claim. Limitations found in the current Federal Express Service Guide apply. Your right to recover from Federal Express for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the declared value specified to the left. Recovery cannot exceed actual documented loss. The maximum Declared Value for FedEx Letter and FedEx Pak packages is $500.

In the event of untimely delivery, Federal Express will at your request and with some limitations refund all transportation charges paid. See Service Guide for further information.

Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.

Federal Express Use	
Base Charges	
Declared Value Charge	
Other 1	
Other 2	
Total Charges	

REVISION DATE 4/94
PART #145412 WCSL 0694
FORMAT #160
160

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fedex
Federal Express

USE THIS AIRBILL FOR SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U.S. LOCATIONS.
QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER **5397591651**

5124N 5397591651

SENDER'S COPY

SENDER'S COPY

1 SENDER'S FEDERAL EXPRESS ACCOUNT NUMBER | Date: 8-3-95

From (Your Name) Please Print: Russell K. Cason
Your Phone Number (Very Important): (210) 731-0000

2 To (Recipient's Name) Please Print:
Recipient's Phone Number (Very Important): (713) 660-0501

Company: Operational Technologies
Department/Floor No.:

Company: SOUTHERN PETROLEUM LAB
Department/Floor No.:

Street Address: 4100 N.W. Loop 410 STE 230

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 4400 INTERCHANGE

City: SAN Antonio State: Tx. ZIP Required: 78229

City: HOUSTON State: TX ZIP Required: 77054

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.)
HENV

H IF HOLD AT FEDEX LOCATION, Print FEDEX Address Here
Street Address: 4702 TRAVIS
City: HOUSTON, State: TX ZIP Required: 77002

3 PAYMENT 1 ☐ Bill Sender 2 ☒ Bill Recipient's FedEx Acct. No. 3 ☐ Bill 3rd Party FedEx Acct. No. 4 ☐ Bill Credit Card
5 ☐ Cash/Check Acct./Credit Card No. 1007983 4-4 Exp. Date: /

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)	Standard Overnight (Delivery by next business afternoon. No Saturday delivery†)
11 ☐ OTHER PACKAGING	51 ☒ OTHER PACKAGING
16 ☐ FEDEX LETTER*	56 ☐ FEDEX LETTER*
12 ☐ FEDEX PAK*	52 ☐ FEDEX PAK*
13 ☐ FEDEX BOX	53 ☐ FEDEX BOX
14 ☐ FEDEX TUBE	54 ☐ FEDEX TUBE

Economy Two-Day (Delivery by second business day†)	Government Overnight (Restricted for authorized users only)
30 ☐ ECONOMY*	46 ☐ GOVT LETTER
	41 ☐ GOVT PACKAGE

* Economy Letter Rate not available. Minimum charge: One pound Economy rate.

Freight Service (for packages over 150 lbs.)
70 ☐ OVERNIGHT FREIGHT** (Confirmed reservation required) 80 ☐ TWO-DAY FREIGHT**

†Delivery commitment may be later in some areas. *Declared Value Limit $500. **Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)

Weekday Service
1 ☐ HOLD AT FEDEX LOCATION WEEKDAY (Fill in Section H)
2 ☐ DELIVER WEEKDAY

Saturday Service
31 ☐ HOLD AT FEDEX LOCATION SATURDAY (Fill in Section H)
3 ☐ DELIVER SATURDAY (Extra charge) (Not available to all locations)
9 ☐ SATURDAY PICK-UP (Extra charge)

Special Handling
4 ☐ DANGEROUS GOODS (Extra charge)
6 ☐ DRY ICE Dangerous Goods Shipper's Declaration not required
Dry Ice, 9, UN 1845, ____ X ____ kg, 904 III
☐ DESCRIPTION
12 ☐ HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
Total 1	Total 63	Total

DIM SHIPMENT (Chargeable Weight) ☐ ____ lbs.
L x W x H

Received At
1 ☐ Regular Stop 3 ☐ Drop Box
2 ☐ On-Call Stop 4 ☐ B.S.C. 5 ☐ Station

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

Use of this airbill constitutes your agreement to the service conditions in our current Service Guide, available upon request. See back of sender's copy of this airbill for information. Service conditions may vary for Government Overnight Service. See U.S. Government Service Guide for details.

We will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss for a timely claim. Limitations found in the current Federal Express Service Guide apply. Your right to recover from Federal Express for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the declared value specified to the left. Recovery cannot exceed actual documented loss. The maximum Declared Value for FedEx Letter and FedEx Pak packages is $500.

In the event of untimely delivery, Federal Express will at your request and with some limitations refund all transportation charges paid. See Service Guide for further information.

7 Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.

Release Signature: _____

Federal Express Use

Base Charges	
Declared Value Charge	
Other 1	
Other 2	
Total Charges	

REVISION DATE 4/94
PART #145412 FXEM 4/95
FORMAT #160

160

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USE THIS AIRBILL FOR SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U.S. LOCATIONS.
QUESTIONS? CALL 800-238-5355 TOLL FREE.

PACKAGE TRACKING NUMBER 5397591673

9124M 5397591673

SENDER'S COPY

SENDER'S COPY

1 SENDER'S FEDERAL EXPRESS ACCOUNT NUMBER | Date: 8-2-95

From (Your Name) Please Print: Russell R. Casun
Your Phone Number (Very Important): (210) 731-0000
Company: Operational Technologies
Department/Floor No.:
Street Address: 4100 N.W. Loop 410, STE 230
City: San Antonio | State: TX | ZIP Required: 78229

2 To (Recipient's Name) Please Print:
Recipient's Phone Number (Very Important): (713)660-0901
Company: SOUTHERN PETROLEUM LAB
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 6380 INTERCHANGE
City: HOUSTON | State: TX | ZIP Required: 77096

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): HENY

H IF HOLD AT FEDEX LOCATION, Print FEDEX Address Here
Street Address: 4702 TRAVIS
City: HOUSTON. | State: TX | ZIP Required: 77002

3 PAYMENT: 1 ☐ Bill Sender 2 ☒ Bill Recipient's FedEx Acct. No. 3 ☐ Bill 3rd Party FedEx Acct. No. 4 ☐ Bill Credit Card
5 ☐ Cash/Check Acct./Credit Card No. 1007943-4 Exp. Date

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)	Standard Overnight (Delivery by next business afternoon. No Saturday delivery†)
11 ☒ OTHER PACKAGING	51 ☒ OTHER PACKAGING
16 ☐ FEDEX LETTER*	58 ☐ FEDEX LETTER*
12 ☐ FEDEX PAK*	52 ☐ FEDEX PAK*
13 ☐ FEDEX BOX	53 ☐ FEDEX BOX
14 ☐ FEDEX TUBE	54 ☐ FEDEX TUBE
Economy Two-Day (Delivery by second business day †)	**Government Overnight** (Restricted for authorized users only)
30 ☐ ECONOMY*	46 ☐ GOVT LETTER
	41 ☐ GOVT PACKAGE

*Economy Letter Rate not available. Minimum charge: One pound Economy rate.

Freight Service (for packages over 150 lbs.)
70 ☐ OVERNIGHT FREIGHT** (Confirmed reservation required)
80 ☐ TWO-DAY FREIGHT**
†Delivery commitment may be later in some areas.
*Declared Value Limit $500.
**Call for delivery schedule.

5 DELIVERY AND SPECIAL HANDLING (Check services required)

Weekday Service
1 ☐ HOLD AT FEDEX LOCATION WEEKDAY (Fill in Section H)
2 ☒ DELIVER WEEKDAY

Saturday Service
31 ☐ HOLD AT FEDEX LOCATION SATURDAY (Fill in Section H)
3 ☐ DELIVER SATURDAY (Extra charge) (Not available to all locations)
9 ☐ SATURDAY PICK-UP (Extra charge)

Special Handling
4 ☐ DANGEROUS GOODS (Extra charge)
6 ☐ DRY ICE Dangerous Goods Shipper's Declaration not required
Dry Ice, 9, UN1845, ____ X ____ kg. 904 III
☐ DESCRIPTION
12 ☐ HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
Total 1	Total 63	Total

DIM SHIPMENT (Chargeable Weight) ☐ ____ lbs.
L ____ X W ____ X H ____

Received At
1 ☐ Regular Stop 3 ☐ Drop Box
2 ☐ On-Call Stop 4 ☐ B.S.C. 5 ☐ Station

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Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.

7 Release Signature: _____

Federal Express Use

Base Charges	
Declared Value Charge	
Other 1	
Other 2	
Total Charges	

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QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 5397591662

5124M 5397591662

SENDER'S COPY

SENDER'S COPY

1 SENDER'S FEDERAL EXPRESS ACCOUNT NUMBER | **Date** 8-1-95

From (Your Name) Please Print | **Your Phone Number (Very Important)**

Company | **Department/Floor No.**

Street Address

City | **State** | **ZIP Required**

2 To (Recipient's Name) Please Print | **Recipient's Phone Number (Very Important)** (713)660-0901

Company SOUTHERN PETROLEUM LAB | **Department/Floor No.**

Exact Street Address *(We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.)* 4600 INTERCHANGE

City HOUSTON | **State** TX | **ZIP Required** 77094

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.)
WENU

H IF HOLD AT FEDEX LOCATION, Print FEDEX Address Here
Street Address 4702 TRAVIS
City HOUSTON, State TX ZIP Required 77002

3 PAYMENT 1 ☐ Bill Sender 2 ☒ Bill Recipient's FedEx Acct. No. 3 ☐ Bill 3rd Party FedEx Acct. No. 4 ☐ Bill Credit Card
5 ☐ Cash/Check Acct./Credit Card No. 1007834-4 Exp. Date

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning†)	Standard Overnight (Delivery by next business afternoon. No Saturday delivery†)
11 ☐ OTHER PACKAGING	51 ☒ OTHER PACKAGING
16 ☐ FEDEX LETTER*	56 ☐ FEDEX LETTER*
12 ☐ FEDEX PAK*	52 ☐ FEDEX PAK*
13 ☐ FEDEX BOX	53 ☐ FEDEX BOX
14 ☐ FEDEX TUBE	54 ☐ FEDEX TUBE
Economy Two-Day (Delivery by second business day †)	**Government Overnight** (Restricted for authorized users only)
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*Economy Letter Rate not available. Minimum charge: One pound Economy rate.

Freight Service (for packages over 150 lbs.)
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†Delivery commitment may be later in some areas. *Declared Value Limit $500. **Call for delivery schedule.

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1 ☐ HOLD AT FEDEX LOCATION WEEKDAY (Fill in Section H)
2 ☒ DELIVER WEEKDAY

Saturday Service
31 ☐ HOLD AT FEDEX LOCATION SATURDAY (Fill in Section H)
3 ☐ DELIVER SATURDAY (Extra charge) (Not available to all locations)
9 ☐ SATURDAY PICK-UP (Extra charge)

Special Handling
4 ☐ DANGEROUS GOODS (Extra charge)
6 ☐ DRY ICE Dangerous Goods Shipper's Declaration not required
Dry Ice, 9, UN 1845, ____ X ____ kg, 904 III
☐ DESCRIPTION
12 ☐ HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
1	23	
Total 1	Total 41	Total

DIM SHIPMENT (Chargeable Weight) ☐ ____ lbs.
L X W X H

Received At
1 ☐ Regular Stop 3 ☐ Drop Box
2 ☐ On-Call Stop 4 ☐ B.S.C. 5 ☐ Station

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Federal Express Use

Base Charges	
Declared Value Charge	
Other 1	
Other 2	
Total Charges	

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APPENDIX H

HRS DATA PACKAGE

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PA/SI DATA REQUIREMENTS FOR FEDERAL FACILITY DOCKET SITES
Minnesota ANGB, Minneapolis, Minnesota

1. **Supply copies of all sampling data, on-site and off-site, including location map, detection limits (see definitions below), raw data sheets, QA/QC documents, date(s) sampled, analytical method(s) used, well or boring logs, and sampling technique(s).**

   Sampling data and detection limits can be found in Section 5.0 of the SI Report. The location map and sampling techniques can be found in Section 4.0 of the SI Report. Raw data sheets, QA/QC documents, dates sampled and analytical methods can be found in Appendix I of the SI Report. Well or boring logs can be found in Appendix A of the SI Report.

2. **Locate and identify on a map all known or suspected sources (see definition below). Supply all information about source(s) such as: dates of operation, use, or spillage; amounts of material deposited, stored, or spilled; dimensions of source(s); known or suspected hazardous substances (see definition below), etc.**

   The above information can be found in Section 2.0 of the SI Report.

3. **Provide a description of all aquifers beneath the site, including description of overlying materials, depth first encountered, thickness, and composition.**

   The above information can be found in Section 3.0 of the SI Report.

4. **For each source, choose one description from Table 1 that describes the groundwater containment. Provide complete documentation (i.e., engineering diagrams, photographs [originals]) as to why the source meets that description and not any other in the Table.**

   The best description for this area is: Belowground tank, evidence of hazardous substance migration from tank area, and tank and ancilary equipment not provided with secondary containment.

5. **Provide the location of all drinking water wells in all aquifers beneath the site within a 4-mile radius from the site (property boundary) by HRS distance ring and locate the wells within a one-mile radius on a 7.5 minute topographic map. Provide information on depth of well(s), screening interval(s), depth of aquifer(s) encountered, population served for multiple wells (i.e., municipal system), provide the number of wells, location of all wells (regardless of 4-mile limit), average annual pumpage of each well (regardless of 4-mile limit), and total population served by the system. Include information on all standby wells.**

Figure H.1 shows all wells within a 2-mile radius from the site. There are approximately 180 wells within a 2-mile radius. Copies of well logs for those wells within a 2-mile radius can be found at the end of this appendix. (Source: Minnesota Geological Survey)

6. **Provide information and location (on 7.5 minute topographic map) of wells within 4 miles that are used to irrigate five or more acres of commercial food or forage crops, or watering of commercial livestock, or ingredient in commercial food preparation, or supply for aquaculture, or supply for a major or designated water recreation area, excluding drinking water use.**

Figure H.1 shows all wells within a 2-mile radius from the site. There are approximately 180 wells within a 2-mile radius. Copies of well logs for those wells within a 2-mile radius can be found at the end of this appendix. (Source: Minnesota Geological Survey)

7. **Provide the average number of persons per residence for county (or counties) that site is located in per the U. S. Census Bureau.**

The following census information was provided for Hennepin County:

Population:	Census (4/1/90) - 1,032,431
	Estimate (4/1/94) - 1,056,673
Households:	Census (4/1/90) - 419,060
	Estimate (4/1/94) - 431,508

(Source: MN Demographer's Office

8. **Identify and locate all surface water bodies within two miles of the site marking off the drainage routes (shown on a 7.5 minute topographic map) from each source to**



SOURCE: OPTECH, 1995-MINNESOTA GEOLOGICAL SURVEY

DRAFT

FIGURE H.1

MINN\MILE-RAD

WATER WELLS LOCATIONS WITHIN TWO-MILE RADIUS OF ANGB MINNEAPOLIS

133rd AW, Minnesota ANGB
Minneapolis, Minnesota

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

DECEMBER 1995

applicable surface water bodies. Provide the average annual cubic feet per second flow for each surface water body within 15 miles downriver or radius from the point of probable entry into surface water. For lakes, provide information on inflow and outflow.

Figure H.2 in the SI Report shows all surface water bodies within two miles of the site, which is the Mississippi River, and its drainage routes. The average annual cubic feet per second flow for this river is 15,000. (Source: Minneapolis Water Department)

9. **For each source, choose one description from Table 2 that describes the surface water containment. Provide complete documentation (i.e., engineering diagrams, photographs [originals]) as to why the source meets that description and not any other in the Table.**

The best description for this area is: All containers buried.

10. **Provide the number of acres in each drainage basin.**

The number of acres in the Mississippi River drainage basin, from Lake Itasca, is 12,595,200. (Source: Minneapolis Water Department)

11. **From Table 3, choose the predominant soil group (surface soil) which comprises the largest total area within each drainage area.**

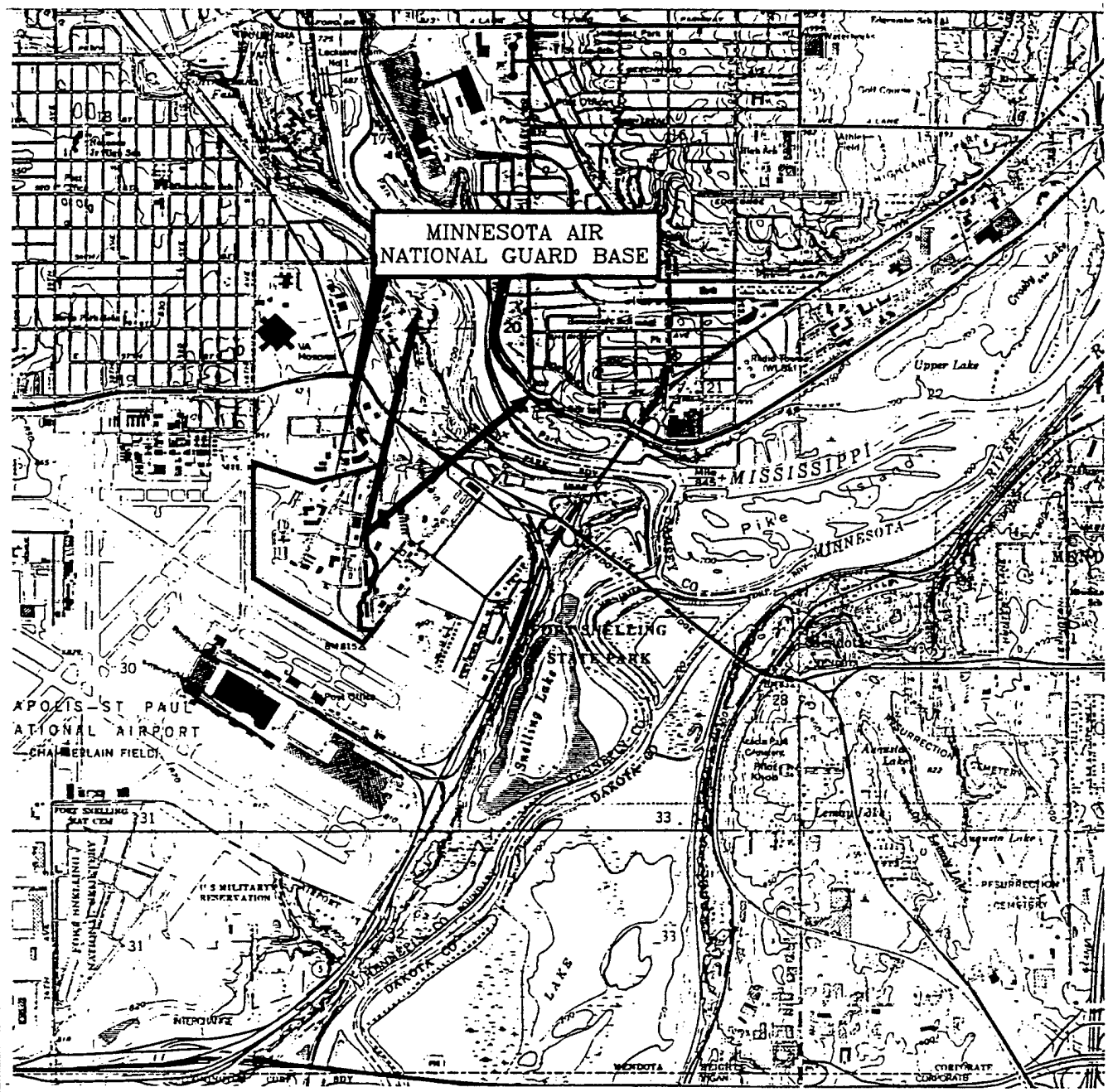
The predominant soil group for this area has not been classified due to urban development and reworking of the soils during construction. The soil can best be classified as medium-textured soils with moderate infiltration rates.

12. **Provide the two year, 24-hour rainfall.**

The two year, 24-hour rainfall for this area is 2.8". (Source: Technical Paper 40)

13. **From Table 4, choose the floodplain category for each source (supply Federal Emergency Management Agency floodplain map) and determine if each source meets the criteria from Table 5 (engineer's certification).**

This area is not within the 100 year floodplain.



SOURCE: 1995-MINNESOTA GEOLOGICAL SURVEY

DRAFT
FIGURE H.2

MINN\MILE-RAD

SURFACE WATER DRAINAGE MAP

133rd AW, Minnesota ANGB
Minneapolis, Minnesota

OPTECH
OPERATIONAL TECHNOLOGIES CORPORATION

JANUARY 1996

14. **Provide the location of all drinking water intakes within 15 downstream miles (rivers) or 15-mile radius (lakes, bays, etc.). Provide information on population served. For multiple intakes (i.e., municipal system), provide information on the number of intakes, location of all intakes (regardless of 15-mile limit), and total population served by system. Include information on all standby intakes.**

There are no other surface water supplies besides the Mississippi River. (Source: Minneapolis Water Department)

15. **Provide information and location of intakes within 15 miles downriver (radius in - lake or bay) that are used to irrigate five or more acres of commercial food or forage crops, or watering of commercial livestock, or ingredient in commercial food preparation, or supply for aquaculture, or supply for a major or designated water recreation area, excluding drinking water use.**

There are no intakes within 15 miles downriver used for the above purpose. (Source: Minneapolis Department of Natural Resources)

16. **Provide any surface water body 15 miles downriver (radius in lakes or bay) used for drinking water.**

The only surface water body 15 miles downriver used for drinking water is the Mississippi River. (Source: SI Report)

17. **Provide the average human food chain production (pounds per year) for each surface water body 15 miles downriver or 15-mile radius in lake.**

This information was not available. (Source: Minneapolis Department of Natural Resources)

18. **Within a 4-mile radius from the site and 15 miles downriver, or radius in lake, identify all sensitive environments that exist. Provide original documentation (USF&W, Natural Heritage Database, State agencies, NOAA, etc.). Note that there could be multiple sensitive environments within a sensitive environment.**

The state of Minnesota has eleven threatened and endangered species of plants and animals. The animals are Karner blue butterfly (Lycaeides melissa samuelis), winged

mapleleaf mussel, (Quadrula fragosa), pearlymussel (Lampsilis higginsi), gray wolf (Canis lupis), bald eagle (Haliaeetus leucocephalus), Peregrine Falcon (Falco peregrinus anatum), and piping plover (Charadrius melodus). The plants are Leedy's roseroot (Sedum integrifolium ssp. leedyi), Minnesota trout lily (Erythronium propullans), prairie bush-clover (Lespedeza leptostachya), and western prairie fringed orchid (Platanthera praeclara). The Minnesota and the Mississippi Rivers plus the large numbers of lakes and palustrine wetlands in the Minneapolis area constitute a tremendous amount of potential habitat for water-loving organisms like the bald eagle, the plover and the two aquatic invertebrates. Any of the above-mentioned bids have the potential of passing over the Minnesota ANGB on their way to the various bodies of water near the Station or beyond.

However, according to the federal government and the Minnesota Department of Natural Resources (DNR) database, there are only six plants and animals of concern within a two-mile radius of the Station. They are all aquatic and three are fish species of special concern to the state of Minnesota. They are the blue sucker (Cycleptus elongatus), the paddlefish (Polydon spathula), and the shovelnose sturgeon (Scaphirhynchos paltorynchus). The blue sucker and the paddlefish are candidates for the federal endangered species list but have not yet been added to the list due to a lack of data. The sturgeon is a candidate for listing as endangered and enough data exists to soon place it on this federal list. Blanding's turtle (Emydoidea Blandingii), is classified as a threatened reptile by the Minnesota DNR and a candidate for the federal endangered species list. The plant Carex formosa, is a candidate for the federal endangered species list but has not yet been added to the list due to lack of data. Another plant, the western prairie fringed orchid, mentioned above, is listed as threatened by the federal government, and endangered by the state of Minnesota. Of note, there used to be a colonial waterbird nesting site within 2 miles of the Station, but it has not been observed since 1984. (Source: Minnesota Department of Natural Resources)

19. **What is the linear frontage of all wetlands 15 miles downriver or 15-mile radius in lake?**

The linear frontage for all wetlands 15 miles downriver is approximately 75 miles. (Source: U.S. Department of the Interior Fish and Wildlife Services Wetlands Map)

20. **Provide the location and number of persons residing, working, attending school, or day care within 200 feet. This includes both the Air and Army Guard.**

The normal working population is 265 whereas, the population during Unit Training Assembly (UTA), which meets once per month, is 1,350. (Source: SI Report)

21. **Identify all terrestrial sensitive environments that exist on-site. Provide original documentation (USF&W, natural Heritage Database, State Agencies, NOAA, etc.) and locate each on a 7.5 minute topographic map. Note that there could be multiple sensitive environments within a sensitive environment.**

Refer to question #18.

22. **For each source, choose one description from Table 8 that describes the accessibility to a human population. Provide complete documentation (i.e., engineering diagrams, photographs [originals]) as to why the source meets that description and not any other in the Table.**

Overall, for the Base, the accessibility can best be described as: Surrounded by maintained fence or combination of a maintained fence and natural barriers. The description for each site is as follows:

Site No: 651 and 652 - Designated recreational area.
801 - Physically inaccessible to public, with no evidence of public recreation use. (This is located along a flightline.)

23. **Provide the total number of people in following distance rings from source(s)?**

- **0-1/4 mile**
  5 persons
- **1/4-1/2 mile**
  27 persons
- **1/2-1 mile**
  1,868 persons
- **1-2 miles**
  20,733 persons

- **2-3 miles**
  43,946 persons

- **3-4 miles**
  91,025 persons

Use 1990 Census data and/or actual house counts. Document how calculated.

Source: 1990 Census (block group level population aggregates)
Prepared by: GEOQUEST Information Technologies, Inc.

24. **For each source, choose one description from Table 9 that describes the gaseous containment. Provide complete documentation (i.e., engineering diagrams, photographs [originals]), as to why the source meets that description and not any other in the Table. From Table 10, choose the appropriate description for each source type. For each source, choose one description from Table 11 that describes the particulate containment. Provide complete documentation (i.e., engineering diagrams, photographs [originals]) as to why the source meets that description and not any other in the Table.**

The best description from each table is as follows:

Table 9: Source covered with essentially impermeable, regularly inspected, maintained cover (for two sites).
Uncontaminated soil cover > 1 foot and < 3 feet: Cover soil resistant to gas migration (for two sites).

Table 10: Containers or tanks (buried/belowground).

Table 11: None of the descriptions are applicable.

25. **Provide the location and area (in acres) of all wetlands within 4 miles of the site.**

There are approximately 1100 acres of wetlands within 4 miles of the site. (Source: U.S. Department of the Interior Fish and Wildlife Services Wetlands Map)

26. **Contact EPA Regional Office immediately if any radionuclides are present or suspected at the site and supply all radiological information known to date.**

No radionuclides are present or suspected at the site.

27. **For all of the above information, use primary data source and supply two copies or specify where copies may be obtained.**

28. **Provide any removals or remedial actions taken place at the site.**

All sites are the result of removed UST, two of which will be No Further Action (NFA).

29. **If information relevant to a question already has been provided to the EPA, your answer may precisely cite the previous submittal by title, date, page, and paragraph number rather than resubmitting the information.**

DEFINITIONS

Detection Limit (DL)

Lowest amount that can be distinguished from the normal random "noise" of an analytical instrument or method. For this submission, the detection limit used is the method detection limit (MDL), or, for real-time instruments, the detection limit of the instrument as used in the field.

Hazardous Substance

CERCLA hazardous substances, pollutants, and contaminant as defined in CERCLA sections 101(14) and 101(33).

Method Detection Limit (MDL)

Lowest concentration of an analyte that a method can detect reliably in either a sample or blank.

Sample Quantitation Limit (SQL)

Quantity of a substance that can reasonably be quantified given the methods of analysis and sample characteristics that may affect quantification (for example, dilution, concentration).

Site: Area(s) where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located. Such areas may include multiple sources and may include areas between sources.

Source: Any area where a hazardous substance has been deposited, stored, disposed, or placed, plus those soils that have become contaminated from migration of a hazardous substance. Sources do not include those volumes of air, groundwater, surface water, or surface water sediments that have become contaminated by migration, except: in the case of either a groundwater plume with no identified source, or contaminated surface water sediments with no identified source, the plume may be considered a source.

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Table 1

All Sources (Except Surface Impoundments, Land Treatment, Containers, and Tanks)

Evidence of hazardous substance migration from source area (i.e., source area includes source and any associated containment structures).

No liner.

No evidence of hazardous substance migration from source area, a liner, and:

(a) None of the following present: (1) maintained engineered cover, (2) functioning and maintained run-on control system and runoff management system, or (3) functioning leachate collection and removal system immediately above liner.

(b) Any one of the three items in (a) present.

(c) Any two of the items in (a) present.

(d) All three items in (a) present plus a functioning groundwater monitoring system.

(e) All items in (d) present plus no bulk or non-containerized liquids nor materials containing free liquids deposited in source area.

No evidence of hazardous substance migration from source area, double liner with functioning leachate collection and removal system above and between liners, functioning groundwater monitoring system, and:

(f) Only one of the following deficiencies present in containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or (2) no or nonfunctioning or nonmaintained run-on control system and runoff management system, or (3) no or nonmaintained engineered cover.

(g) None of the deficiencies in (f) present.

Source area inside or under maintained intact structure that provides protection from precipitation so that neither runoff nor leachate is generated, liquid or materials containing free liquids not deposited in source area, and functioning and maintained run-on control present.

Surface Impoundment

Evidence of hazardous substance migration from surface impoundment.

No liner.

Free liquids present with either no diking, unsound diking, or diking that is not regularly inspected and maintained.

No evidence of hazardous substance migration from surface impoundment, free liquids present, sound diking that is regularly inspected and maintained, adequate freeboard, and:

(a) Liner.

(b) Liner with functioning leachate collection and removal system below liner, and functioning groundwater monitoring system.

(c) Double liner with functioning leachate collection and removal system between liners, and functioning groundwater monitoring system.

No evidence of hazardous substance migration from surface impoundment and all free liquids eliminated at closure (either by removal of liquids or solidification of remaining wastes and waste residues).

Land Treatment

Evidence of hazardous substance migration from land treatment zone.

No functioning, maintained, run-on control and runoff management system.

No evidence of hazardous substance migration from land treatment zone and:

(a) Functioning and maintained run-on control and runoff management system.

(b) Functioning and maintained run-on control and runoff management system, and vegetative cover established over entire land treatment area.

(c) Land treatment area maintained in compliance with 40 CFR 264.280.

Containers

All containers buried.

Evidence of hazardous substance migration from container area (i.e., container area includes containers and any associated containment structures).

No liner (or no essentially impervious base) under container area.

No diking (or no similar structure) surrounding container area.

Diking surrounding container area unsound or not regularly inspected and maintained.

No evidence of hazardous substance migration from container area, container area surrounded by sound diking that is regularly inspected and maintained, and:

(a) Liner (or essentially impervious base) under container area.

(b) Essentially impervious base under container area with liquids collection and removal system.

(c) Containment system includes essentially impervious base, liquids collection system, sufficient contain 10 percent of volume of all containers, and functioning and maintained run-on control; plus functioning groundwater monitoring system, and spilled or leaked hazardous substances and accumulated precipitation removed in timely manner to prevent overflow of collection system, at least weekly inspection of containers, hazardous substances in leaking or deteriorating containers transferred to containers in good condition, and containers sealed except when waste is added or removed.

(d) Free liquids present containment system has sufficient capacity to hold total volume of all containers and to provide adequate freeboard, single liner under container area with functioning leachate collection and removal system below liner, and functioning groundwater monitoring system.

(e) Same as (d) except: double liner under container area with functioning leachate collection and removal system between liners.

Containers inside or under maintained intact structure that provides protection from precipitation so that neither runoff nor leachate would be generated from any unsealed or ruptured containers, liquids or materials containing free liquids not deposited in any container, and functioning and maintained runoff control present.

No evidence of hazardous substance migration from container area, containers leaking, and all free liquids eliminated at closure (either by removal of liquid or solidification of remaining wastes and waste residues).

Tank

Belowground tank.

Evidence of hazardous substance migration from tank area (i.e., tank area includes tank, ancillary equipment such as piping, and any associated containment structures).

Tank and ancillary equipment not provided with secondary containment, (e.g., liner under tank area, vault system, double wall).

No diking (or no similar structure) surrounding tank and ancillary equipment

Diking surrounding tank and ancillary equipment unsound or not regularly inspected and maintained.

No evidence of hazardous substance migration from tank area, tank and ancillary equipment surrounded by sound diking that is regularly inspected and maintained, and:

(a) Tank and ancillary equipment provided with secondary containment.

(b) Tank and ancillary equipment provided with secondary containment with leak detection and collection system.

(c) Tank and ancillary equipment provided with secondary containment system that detects and collects spilled or leaked hazardous substances and accumulated precipitation and has sufficient capacity to contain 110 percent of volume of largest tank within containment area, spilled or leaked hazardous substances and accumulated precipitation removed in timely manner, at least weekly inspection of tank and secondary containment system, all leaking or unfit-for-use tank systems promptly responded to, and functioning groundwater monitoring system.

(d) Containment system has sufficient capacity to hold volume of all tanks within tank containment area and to provide adequate freeboard, single liner under that containment area with functioning leachate collection and removal system below liner, and functioning groundwater monitoring system.

(e) Same as (d) except double liner under tank containment area with functioning leachate collection and removal system between liners.

Tank is aboveground, and inside or under maintained intact structure that provides protection from precipitation so that neither runoff nor leachate would be generated from any material released from tank, liquids or materials containing free liquids not deposited in any tank, and functioning and maintained run-on control present.

Table 2

All Sources (Except Surface Impoundments, Land Treatment, Containers, and Tanks)

Evidence of hazardous substance migration from source area (i.e., source area includes source and any associated containment structures).

No evidence of hazardous substance migration from source areas and:

(a) Neither of the following present: (1) maintained engineered cover, or (2) functioning and maintained run-on control system and runoff management system.

(b) Any one of the two items in (a) present.

(c) Any two of the following present: (1) maintained engineered cover, or (2) functioning and maintained run-on control system and runoff management system, or (3) liner with functioning leachate collection and removal system immediately above liner.

(d) All items in (c) present.

(e) All items in (c) present, plus no bulk or non-containerized liquids nor materials containing free liquids deposited in source area.

No evidence of hazardous substance migration from source area, double liner with functioning leachate collection and removal system above and between liners, and:

(f) Only one of the following deficiencies present in containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or (2) no or nonfunctioning or nonmaintained run-on control system and runoff management system, or (3) no or nonmaintained engineered cover.

(g) None of the deficiencies in (f) present.

Source area inside or under maintained intact structure that provides protection from precipitation so that neither runoff nor leachate is generated, liquids or materials containing free liquids not deposited in source area, and functioning and maintained run-on control present.

Surface Impoundment

Evidence of hazardous substance migration from surface impoundment.

Free liquids present with either no diking, unsound diking, or diking that is not regularly inspected and maintained.

No evidence of hazardous substance migration from surface impoundment, free liquids present, sound diking that is regularly inspected and maintained, adequate freeboard, and:

(a) No liner.

(b) Liner.

(c) Liner with functioning leachate collection and removal system below liner.

(d) Double liner with functioning leachate collection and removal system between liners.

No evidence of hazardous substance migration from surface impoundment and all free liquids eliminated at closure (either by removal of liquids or solidification of remaining wastes and waste residues).

Land Treatment

Evidence of hazardous substance migration from land treatment zone.

No functioning and maintained run-on control and runoff management system.

No evidence of hazardous substance migration from land treatment zone and:

(a) Functioning and maintained and maintained run-on control and runoff management system.

(b) Functioning and maintained run-on control and runoff management system, and vegetative cover established over entire land treatment area.

(c) Land treatment area maintained in compliance with 40 CFR 264.280.

Containers

All containers buried.

Evidence of hazardous substance migration from container area (i.e., container area includes containers and any associated containment structures).

No diking (or no similar structure) surrounding container area.
Diking surrounding container area unsound or not regularly inspected and maintained.
No evidence of hazardous substance migration from container area and container area surrounded by sound diking that is regularly inspected and maintained.
No evidence of hazardous substance migration from container area, container area surrounded by sound diking that is regularly inspected and maintained, and:

(a) Essentially impervious base under container area with liquids collection and removal system.

(b) Containment system includes essentially impervious base, liquids collection system, sufficient capacity to contain 10 percent of volume of all containers, and functioning and maintained run-on control; and spilled or leaked hazardous substances and accumulated precipitation removed in timely manner to prevent overflow of collection system, at least weekly inspection of containers, hazardous substances in leaking or deteriorating containers transferred to containers in good condition, and containers sealed except when waste is added or removed.

(c) Free liquids present containment system has sufficient capacity to hold total volume of all containers and to provide adequate freeboard, and single liner under container area with functioning leachate collection and removal system below liner.

(d) Same as (c) except: double liner under container area with functioning leachate collection and removal system between liners. Containers inside or under maintained intact structure that provides protection from precipitation so that neither runoff nor leachate would be generated from any unsealed or ruptured containers, liquids or materials containing free liquids not deposited in any container, and functioning and maintained run-on control present.

No evidence of hazardous substance migration from container area, containers leaking, and all free liquids eliminated at closure (either by removal of liquids or solidification of remaining wastes and waste residues).

Tank

Belowground tank.
Evidence of hazardous substance migration from tank area (i.e., tank area includes tank, ancillary equipment such as piping, and any associated containment structures).
No diking (or no similar structure) surrounding tank and ancillary equipment.
Diking surrounding tank and ancillary equipment unsound or not regularly inspected and maintained.
No evidence of hazardous substance migration from tank area and tank and ancillary equipment surrounded by sound diking that is regularly inspected and maintained.
No evidence of hazardous substance migration from tank area, tank and ancillary equipment surrounded by sound diking that is regularly inspected and maintained, and:

(a) Tank and ancillary equipment provided with secondary containment (e.g., liner under tank area, vault system, double wall) with leak detection and collection system.

(b) Tank and ancillary equipment provided with secondary containment system that detects and collects spiked or leaked hazardous substances and accumulated precipitation and has sufficient capacity to contain 110 percent of volume of largest tank within containment area, spilled or leaked hazardous substances and accumulated precipitation removed in a timely manner, at least weekly inspection of tank and secondary containment system, and all leaking or unfit-for-use tank systems promptly responded to.

(c) Containment system has sufficient capacity to hold total volume of all tanks within the tank containment area and to provide adequate freeboard, and single liner under tank containment area with functioning leachate collection and removal system below liner.

(d) Same as (c) except double liner under tank containment area with functioning leachate collection and removal system between liners.

Tank is aboveground, and inside or under maintained intact structure that provides protection from precipitation so that neither runoff nor leachate would be generated from any material released from tank, liquids or materials containing free liquids not deposited in any tank, and functioning and maintained run-on control present.

Table 3

Surface Soil Description

Coarse-textured soils with high infiltration rates (for example, sands, loamy sands).
Medium-textured soils with moderate infiltration rates (for example, sandy loams, loams).
Moderately fine-textured soils with low infiltration rates (for example, silty loams, silts, sandy clay loams).
Fine-textured soils with very low infiltration rates (for example, clays, sandy clays, silty clay loams, clay loams, silty clays); or impermeable surfaces (for example, pavement).

Table 4

Floodplain Categories

Source floods annually.
Source in 10-year floodplain.
Source in 100-year floodplain.
Source in 500-year floodplain.
None of the above.

Table 5

Flood Containment

Documentation that containment at the source is designed, constructed, operated, and maintained to prevent a washout of hazardous substances by the flood being evaluated (see floodplain category).

Table 6

Sensitive Environments

Critical habitat[a] for Federal designated endangered or threatened species.
Marine Sanctuary.
National Park.
Designated Federal Wilderness Area.

Areas identified under Coastal Zone Management Act[b].
Sensitive areas identified under National Estuary Program[c] or Near Coastal Waters Program[d].
Critical areas identified under the Clean Lakes Program[e].
National Monument[f].
National Seashore Recreational Area.
National Lakeshore Recreational Area.
Habitat known to be used by Federal designated or proposed endangered or threatened species.
National Preserve.
National or State Wildlife Refuge.
Unit of Coastal Barrier Resources System.
Coastal Barrier (undeveloped).
Federal land designated for protection of natural ecosystems.
Administratively Proposed Federal Wilderness Area.
Spawning areas critical[g] for the maintenance of fish/shellfish species within river, lake, or coastal tidal waters.
Migratory pathways and feeding areas critical for maintenance of anadromous fish species within river reaches or areas in lakes or coastal tidal waters in which the fish spend extended periods of time.
Terrestrial areas utilized for breeding by large or dense aggregations of animals[h].
National river reach designated as Recreational.
Habitat known to be used by State designated endangered or threatened species.
Habitat known to be used by species under review as to its Federal endangered or threatened status.
Coastal Barrier (partially developed).
Federal designated Scenic or Wild River.
State land designated for wildlife or game management.
State designated Scenic or Wild River.
State designated Natural Areas.
Particular areas, relatively small in size, important to maintenance of unique biotic communities.
State designated areas for projection or maintenance of aquatic life[i].

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[a]Critical habitat as defined in 50 CFR 424.02.

[b]Areas identified in State Coastal Zone Management plans as requiring protection because of ecological value.

[c]National Estuary Program study areas (Subareas within subareas) identified in Comprehensive Conservation and Management Plans as requiring protection because they support critical life stages of key estuarine species (Section 320 of Clean Water Act, as amended).

[d]Near Coastal Waters as defined in Sections 104(b)(3), 304(1), 319, and 320 of Clean Water Act, as amended.

[e]Clean Lakes Program critical areas (subareas within lakes, or in some cases entire small lakes) identified by State Clean Lake Plans as critical habitats (Section 314 of Clean Water Act, as amended).

[f]Use only for air migration pathway.

[g]Limit to areas described as being used for intense or concentrated spawning by a given species.

[h]For the air migration pathway, limit to terrestrial vertebrate species. For the surface water migration pathway, limit to terrestrial vertebrate species aquatic or semiaquatic foraging habits.

[i]Areas designated under Section 305(a) of Clean Water Act, as amended.

Table 7

Terrestrial Sensitive Environments

Terrestrial critical habitat[a] for Federal designated endangered or threatened species.

National Park.
Designated Federal Wilderness Area.
National Monument.
Terrestrial habitat known to be used by Federal designated or proposed threatened or endangered species.
National Preserve (terrestrial).
National or State Terrestrial Wildlife Refuge.
Federal land designated for protection of natural ecosystems.
Administratively proposed Federal Wilderness Area.
Terrestrial areas utilized for breeding by large or dense aggregations of animals[b].
Terrestrial habitat known to be used by State designated endangered or threatened species.
Terrestrial habitat known to be used by species under review as to its Federal designated endangered or threatened status.
State lands designated for wildlife or game management.
State designated Natural Areas.
Particular area, relatively small in size, important to maintenance of unique biotic communities.

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[a]Critical habitat as defined in 50 CFR 42.
[b]Limit to vertebrate species.

Table 8
Area of Observed Contamination

Designated recreational area.
Regularly used for public recreation (for example, fishing, hiking, softball).
Accessible and unique recreational area (for example, vacant lots in urban area).
Moderately accessible (may have some access improvements – for example, gravel road), with some public recreation use.
Slightly accessible (for example, extremely rural area with no road improvement), with some public recreation use.
Accessible, with no public recreation use.
Surrounded by maintained fence or combination of maintained fence and natural barriers.
Physically inaccessible to public, with no evidence of public recreation use.

Table 9
Gas Containment Description

All situations except those specifically listed below.
Evidence of biogas release.
Active fire within source.
Gas collection/treatment system functioning, regularly inspected, maintained, and completely covering source.
Source substantially surrounded by engineering windbreak and no other containment specifically described in this table applies.
Source covered with essentially impermeable, regularly inspected, maintained cover.

Uncontaminated soil cover >3 feet:

Source substantially vegetated with little exposed soil.

Source lightly vegetated with much exposed soil.

Source substantially devoid of vegetation.

Uncontaminated soil cover ≥ 1 foot and ≤3 feet:

Source heavily vegetated with essentially no exposed soil.

Cover soil resistant to gas migration[a].

Cover soil type not resistant to gas migration[a] or unknown.

Source substantially vegetated with little exposed soil and cover soil type resistant to gas migration[a].

Other.

Uncontaminated soil cover <1 foot:

Source heavily vegetated with essentially no exposed soil and cover soil type resistant to gas migration[a].

Other.

Totally or partially enclosed within structurally intact building and no other containment specifically described in this table applies.

Source consists solely of intact, sealed containers:

Totally protected from weather by regularly inspected, maintained cover.

Other.

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[a]Consider moist fine-grained and saturated coarse-grained soils resistant to gas migration; consider all other soils nonresistant.

Table 10

Source Type

Active fire area.

Burn pit.

Containers or tanks (buried/belowground):

Evidence of biogas release.

No evidence of biogas release.

Containers or tanks, not elsewhere specified.

Contaminated soil (excluding land treatment).

Landfarm/land treatment.

Landfill:

Evidence of biogas release.

No evidence of biogas release.

Pile:

Tailings pile.

Scrap metal or junk pile.

Trash pile.

Chemical waste pile.

Other waste piles.

Surface impoundments (buried/backfilled):

Evidence of biogas release.

No evidence of biogas release.

Surface impoundment (not buried/backfilled):

Dry.

Other.

Other types of sources, not elsewhere specified.

Table 11

Particulate Containment Description

All situations except those specifically listed below.

Source contains only particulate hazardous substances totally covered by liquids.

Source substantially surrounded by engineered windbreak and no other containment specifically described in this table applies.

Source covered with essentially impermeable, regularly inspected, maintained cover.

Uncontaminated soil cover >3 feet:

Source substantially vegetated with little or no exposed soil.

Source lightly vegetated with much exposed soil.

Source substantially devoid of vegetation.

Uncontaminated soil cover ≥1 foot and ≤3 feet:

Source heavily vegetated with essentially no exposed soil:

Cover soil type resistant to gas migration[a].

Cover soil type not resistant to gas migration[a].

Source substantially vegetated with little exposed soil and cover soil type resistant to gas migration[a].

Other.

Uncontaminated soil cover <1 foot:

Source heavily vegetated with essentially no exposed soil and cover soil type resistant to gas migration[a].

Other.

Totally or partially enclosed within structurally intact building and no other containment specifically described in this table applies.

Source consists solely of containers:

All containers contain only liquids.

All containers intact, sealed, and totally protected from weather by regularly inspected, maintained cover.

All containers intact and sealed.

Other.

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[a]Consider moist fine-grained and saturated coarse-grained soils resistant to gas migration; consider all other soils nonresistant.